



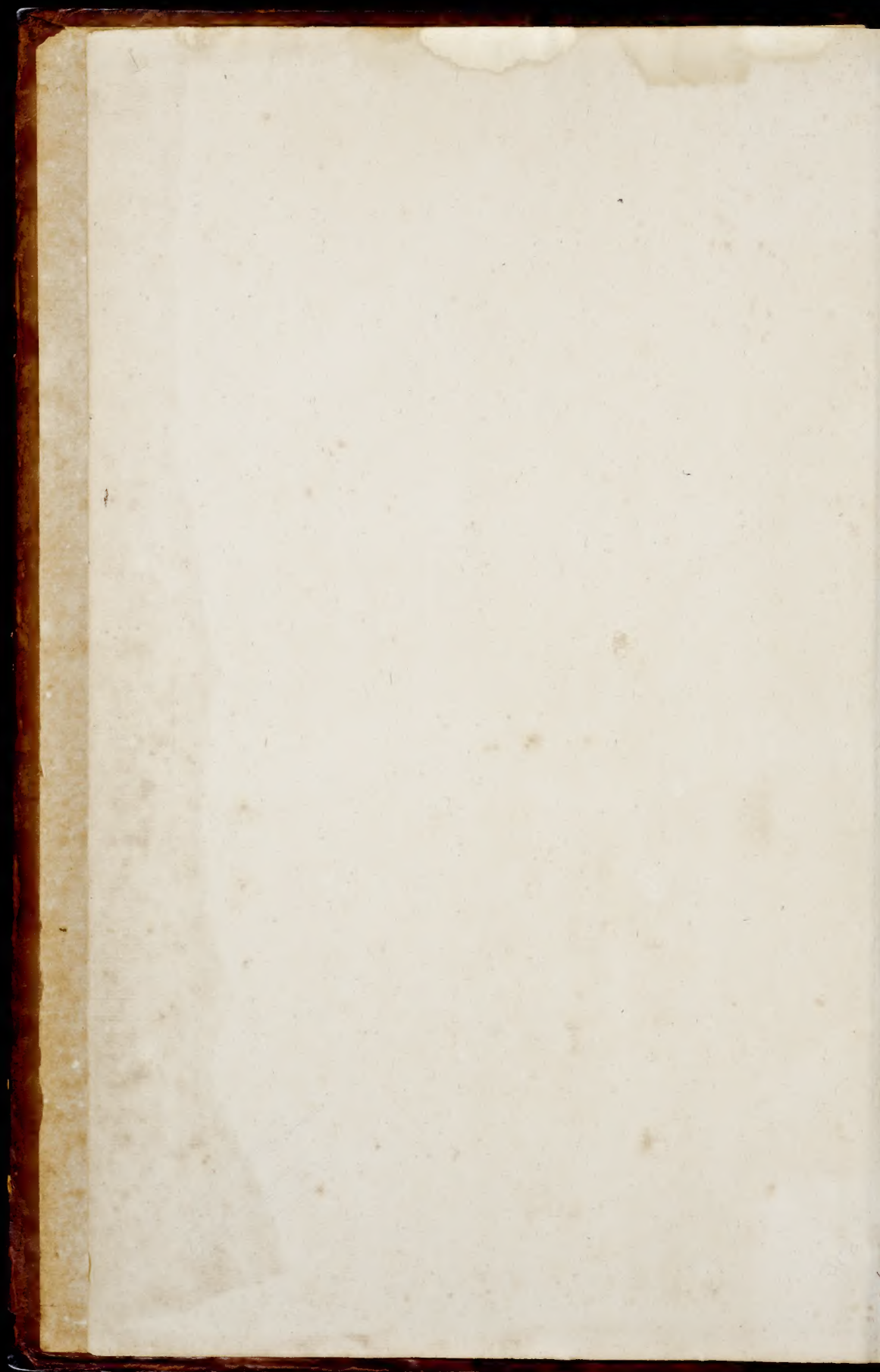


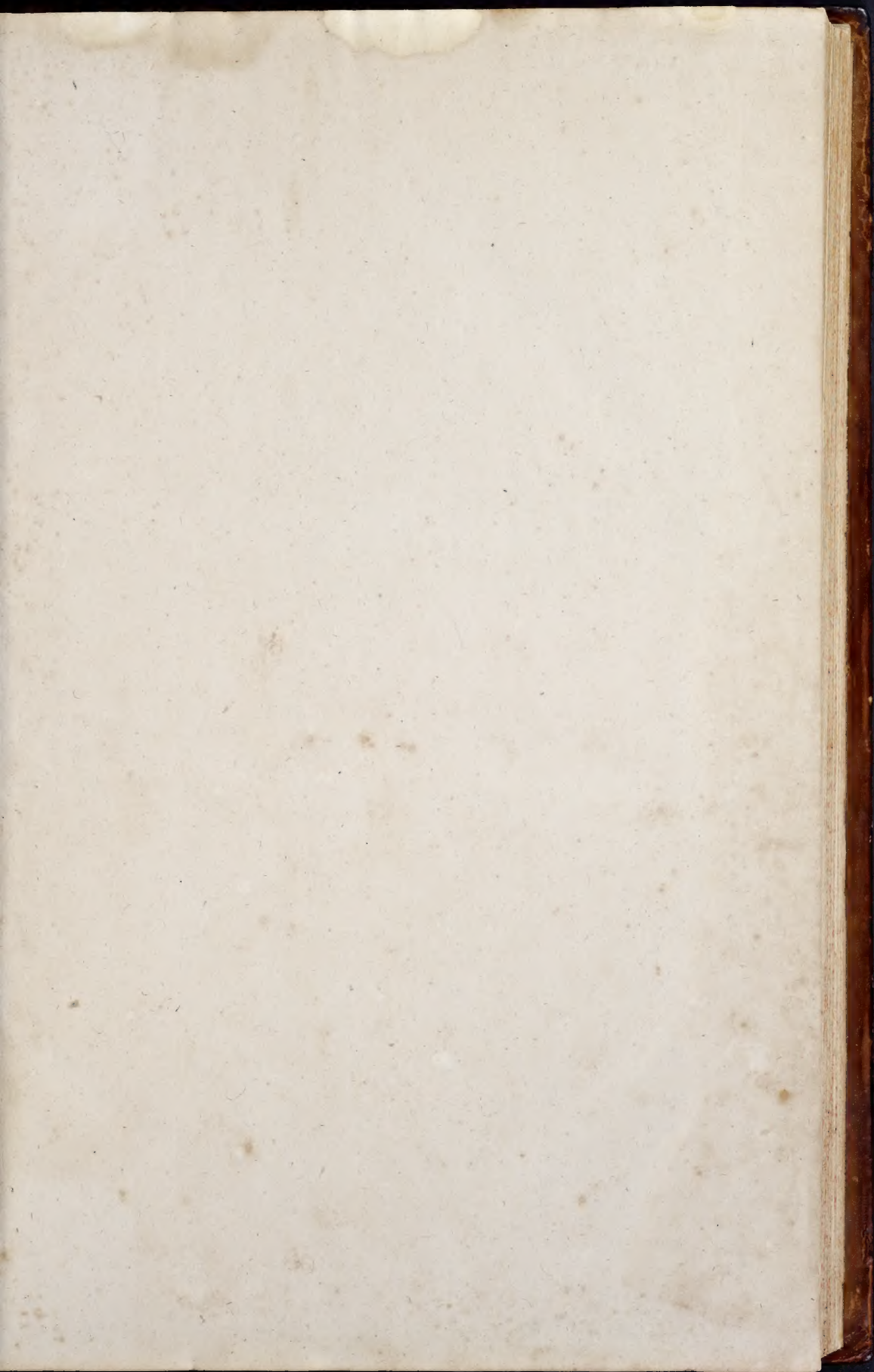
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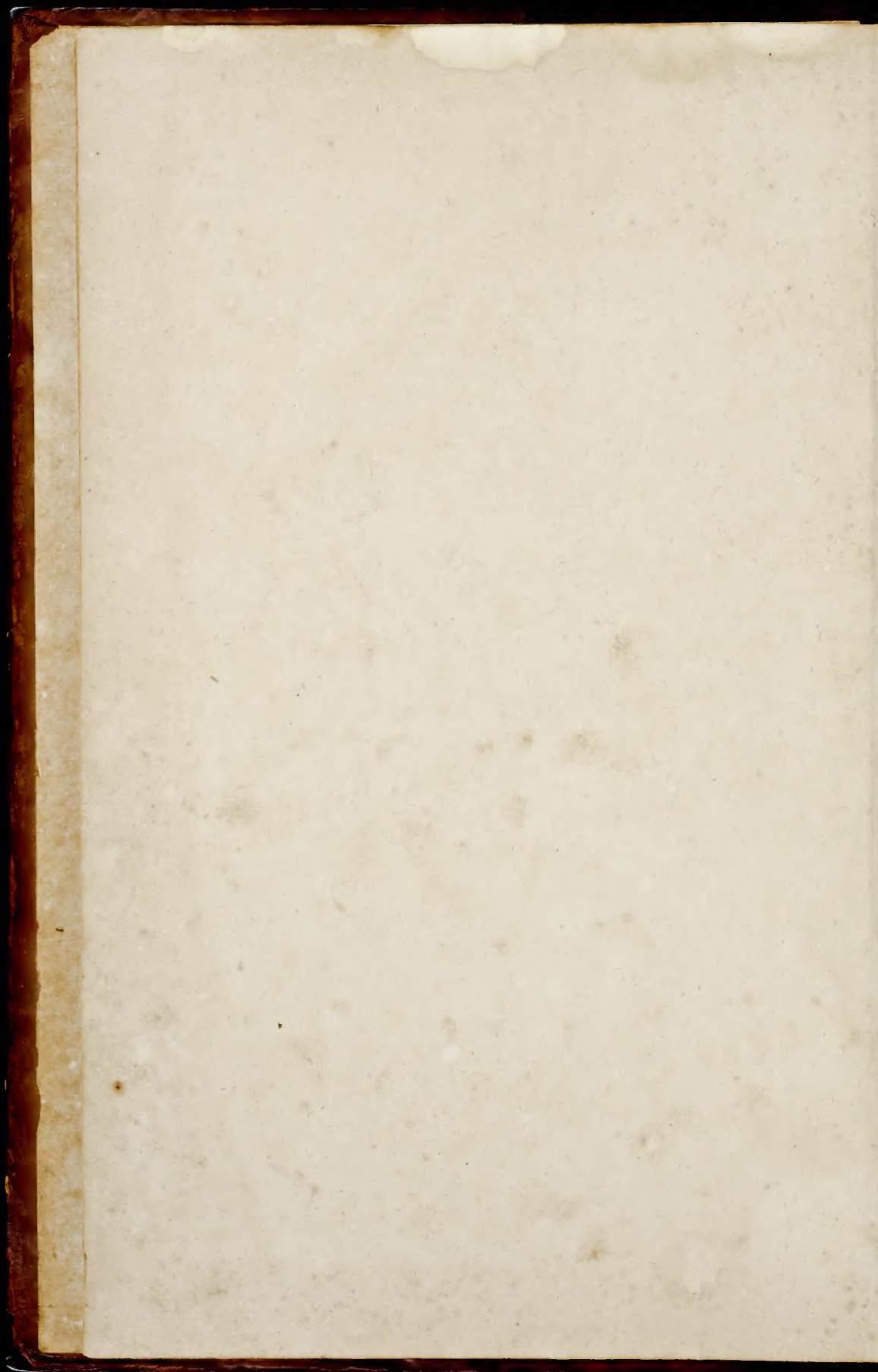
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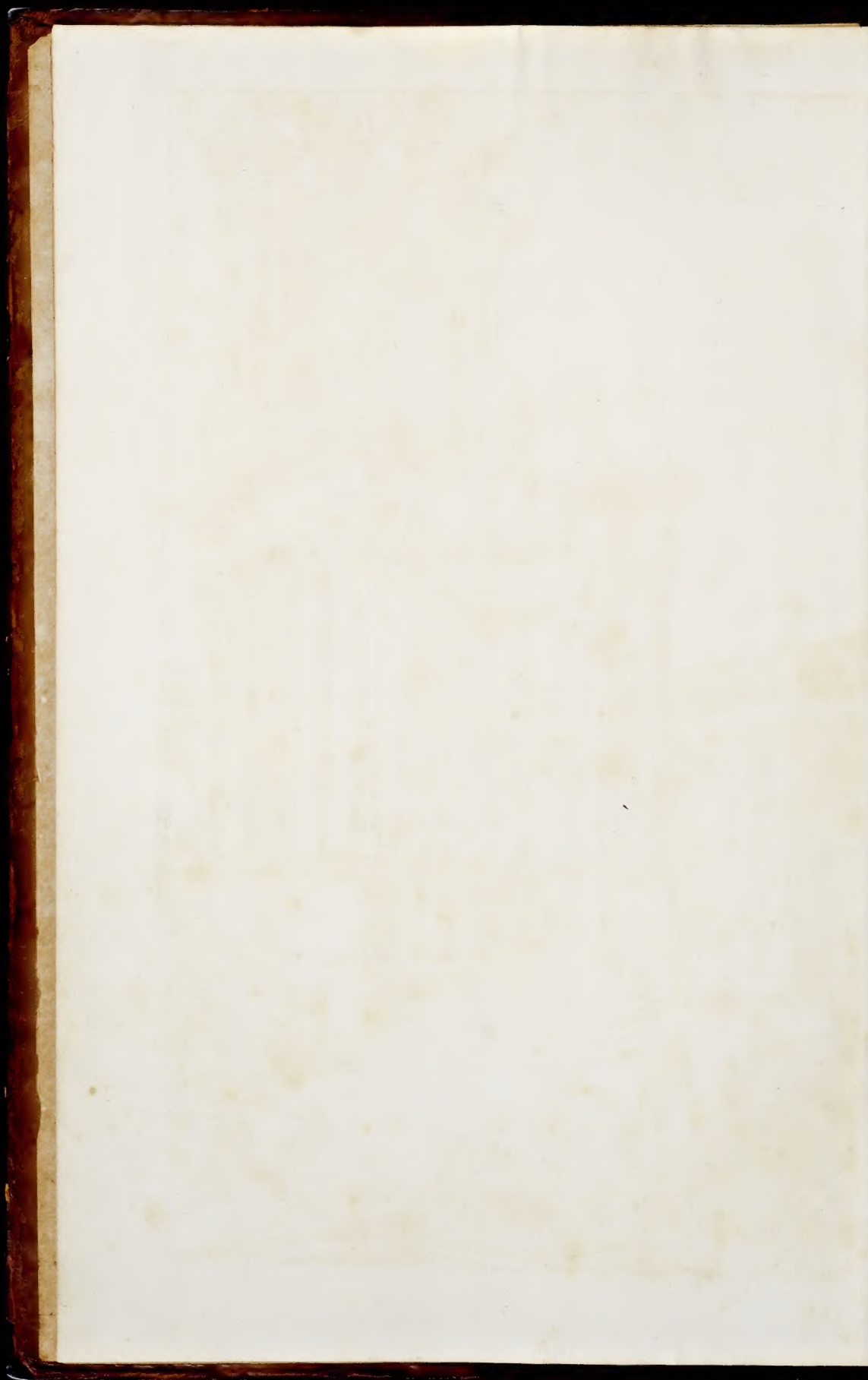
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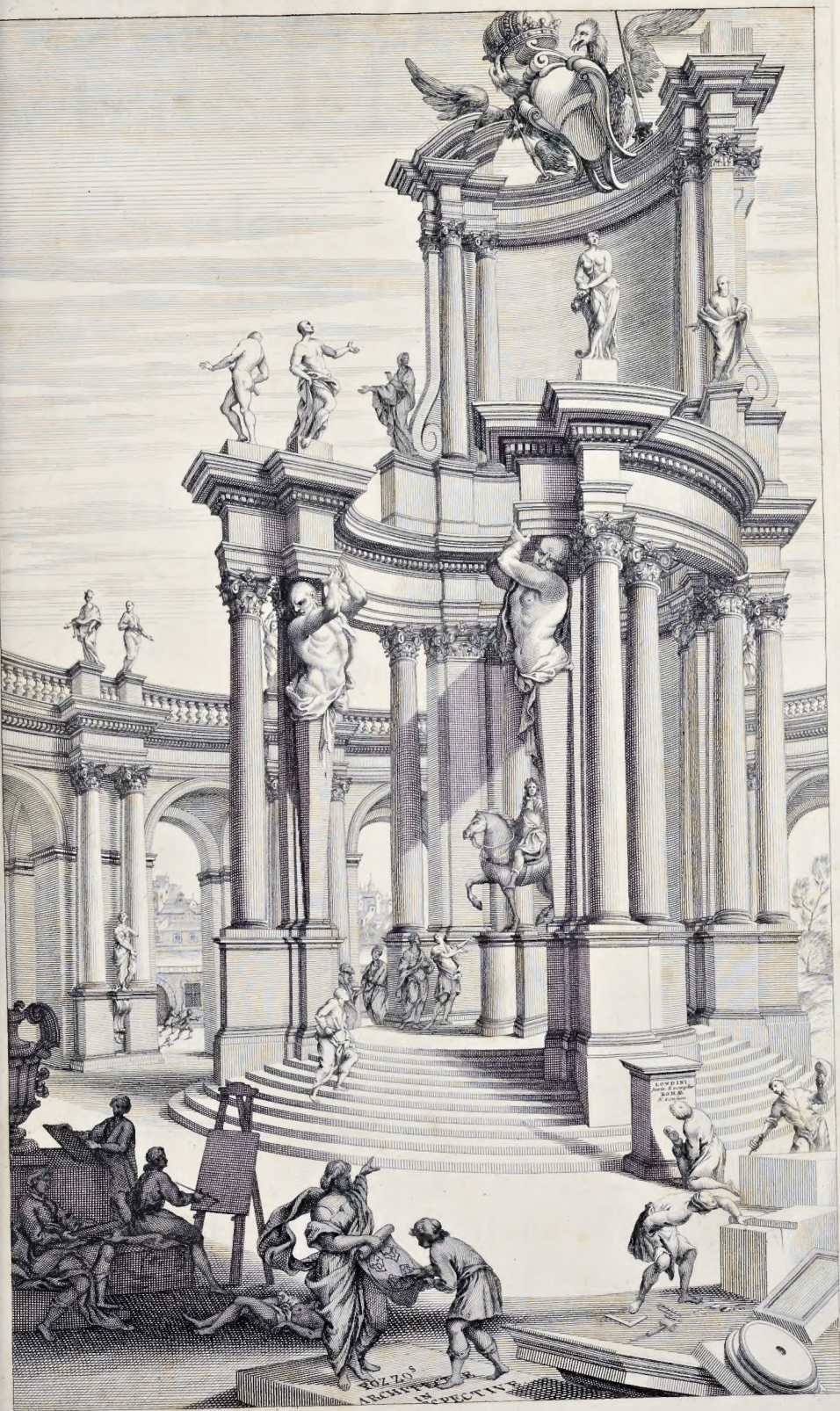
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Rules and Examples of
P E R S P E C T I V E
PROPER FOR

Painters and Architects, etc.
In English and Latin:

Containing a most easie and expeditious Method to

DELINEATE in PERSPECTIVE

AND DESIGNS relating to ARCHITECTURE,

AFTER A NEW MANNER,

Wholly free from the Confusion of Occult Lines:

BY THAT GREAT MASTER THEREOF,

ANDREA POZZO, Soc. Jcf.

*Engraven in 105 ample folio Plates, and adorn'd with 200 Initial Letters to
the Explanatory Discourses: Printed from Copper-Plates on y^e best Paper*

By John Sturt.

Done into English from the Original Printed at Rome 1693 in Lat. and Ital.

By M^r John James of Greenwich.



L O N D O N:

PRINTED by Benj. Motte, MDCCCVII.

Sold by John Sturt in Golden-Lion-Court in

Aldersgate-Street.

1851

April 1st

1851

PERSPECTIVA
P I C T O R U M
ET
ARCHITECTORUM,
ANDREÆ PUTEI,
E SOCIETATE IESU.

In quâ docetur Modus expeditissimus Delineandi
Opticè omnia quę pertinent ad Architecturam.



L O N D I N I:

Juxta Exemplar ROMÆ excusum. MDCXCIII.

Ex Sculpturâ Joannis Sturt, et ejusd. Curâ adornata:

TYPIS Benj. Motte, MDCCVII.

1713



TO

Her most Sacred Majesty,

QUEEN ANNE.

May it please your Majesty!



THE Condescension of the late Emperor
of Germany to patronize this **WORK**
in the **Original**, could not have incited
me to the Presumption of laying the
Translation at Your Royal Feet; had not the **Art** of
PERSPECTIVE, of which it treats, been so nearly ally'd

A

to

DEDICATION.

to the Noble Arts of PAINTING and ARCHITECTURE. The First of these Your Majesty has been pleas'd to honour, as well in expressing a Satisfaction with the Performances, as in extending Your Royal Munificence to that great Master thereof, Signor Verrio.

AND although Affairs of higher Consequence have hitherto deferr'd Your Majesty's Commands for Raising WHITE-HALL from its Ruins; yet has not Architecture been without Encouragement, under Your Majesty's Most Auspicious Reign: Witness the great Dispatch lately given to those Noble Fabricks of S. PAUL's, Greenwich-Hospital, and Blenheim.

THESE seem to presage, that a Time is coming, when, through the Blessing of Peace, and the Happy Influence of Your Majesty's Government; WHITE-HALL shall become a Structure worthy its Great Restorer, and its Name as much Celebrated among Palaces, as Your Royal Vertues are Illustrious among Princes: When Your Majesty's Subjects shall exert themselves as much to their Country's Honour, in the Arts of Design, and Civil Architecture; as they have already done in the Art Military, and Personal Valour.

PRELIMINARY to such Happy Season, I presume this Art of Perspective made Practicable, may not be improper; being One of the most Useful, though hitherto the most Obscure and Confus'd, of all the Lineary Arts.
I there-

DEDICATION.

I therefore, with all Submission, beg Leave to supplicate Your Majesty's Pardon for this Address, and Your Gracious Protection of this Specimen of English Graving; to which if Your Majesty vouchsafe Your Royal PATRONAGE, it will effectually animate the future Endeavours of,

May it please Your Majesty !

Your Most Obedient Subject,

J. STURT.



P R E F A C E

TO THIS

T R A N S L A T I O N.



NOTWITHSTANDING the *Art* of PERSPECTIVE must be acknowledg'd so highly and indispensably requisite in the Practice of *Painting*, *Architecture*, and *Sculpture*; that in the First of these especially, nothing commendable can be perform'd without its Assistance: Yet such have been the Difficulties and Obscurities met with in the first Attempts, and so great the Perplexity and Confusion of Lines in the Practice thereof; that the best Instructions, hitherto made

English, have invited very few to such a Prosecution of this Study, as might render their Performances of this kind, truly valuable.

'Tis something unaccountable, that, among so many learned Persons as have handled this Subject, *Priests*, *Architects*, and *Painters*; very few, if any of them, have given Directions proper for shunning that Disorder and Confusion of Lines, which, in most Instances, must necessarily attend the Execution of their Rules: In all or most of which, the whole Space for the Performance is confin'd between the Lines of the Plan and Horizon; which, where the Scale is small, and the Height of the Eye not very much advanc'd, renders the Work exceedingly confus'd; and where those Lines are coincident, (which frequently happens) the Method becomes utterly impracticable.

THIS Author's great Experience in the Practice of *Perspective*, having furnish'd him with excellent RULES for Shortning the Work, and Obviating the foremention'd Difficulties; he has here very generously imparted them, and especially the latter, in the Tenth and Eleventh Figures. And tho' on Perusal of the first three or four Plates, this Method may possibly seem the same that some others have before made use of; yet whoever shall diligently observe and copy the Rules and Examples of the succeeding Figures, must necessarily acknowledge the great Advantage this has in a Perspective-Plan and Upright, clear and distinct; whence the finish'd Piece is deduc'd, without the least Incumbrance of the Work. The Explanations of the Rules here given, are short and instructive; and the Architectonical Designs produc'd to exemplify them, Noble and Magnificent.

THE Manner of Designing, where the Perspective is drawn on several Ranges of Frames one behind the other, and such Scenes of Theaters whose Grooves lie oblique to the middle Line, is also here laid down: And by our Author's Method, *Horizontal Perspective*, or that of Ceilings, is render'd less difficult than the *Vertical*, or that against

P R E F A C E

an upright Wall. Upon the whole, nothing seems wanting that may make a Work of this nature complete; unless what concerns Designs which are either Circular, or abound with many Columns: For the Performance whereof, the Author, as he promises in the Sixty-fifth Figure, has, in a SECOND Volume, given a Rule more proper for the purpose; which also may possibly be made *English* in due time, if this Part meet with Encouragement.

WHAT the Author once intended should make a Part of that Second Volume, he afterwards inserted in the Ninety-third and following Figures of this Book: In the last of which, particular Notice should be taken of his Conclusion; *That if Painters would not run into inextricable Errors, they ought as strictly to observe the Rules of Perspective, in designing the Figures of Men and Animals; as they do in painting Columns, Cornices, or other Parts of Architecture.*

THAT none therefore be discourag'd in their first Attempts, through the Brevity or Silence of our Author; (who, writing in a Country where the Principles of this Art are more generally known than with Us, had no need to insist so long on some things, as might be thought necessary to *Beginners*) we shall endeavour to speak as plainly as we can to a point or two, most liable to be misunderstood, or to prove a Stumbling-Block at the Entrance; and then add a Word of Advice to such as shall attempt the putting these Rules in Execution.

THE Author, in both his Explanations of the first Plate, has given some Account of what he would have his Reader understand, by *Designing in Perspective*; and a right Conception of this point being of great Use to facilitate the Work, we thought it not improper, to describe something more particularly, what is meant by the Art *Perspective*; but shall at present speak only of That, which, whether Vertical or Horizontal, is receiv'd on a Flat and Even Superficies; This being of much the more general Use, and, when rightly understood, renders the Difficulties of the Circular or Irregular Surfaces, easy and familiar.

PERSPECTIVE is the Art of Delineating, on a flat Superficies, as a Wall, Ceiling, Canvas, Paper, or the like, the Appearances of Objects, as seen from One determinate Point: For tho' in Works of great Length, Two, Three, or more Points of Sight are sometimes made use of; yet such may more properly be said to be Several Views conjoin'd, than One Piece of Perspective: Of which see the Author's Opinion, at the End of this Treatise.

IN Perspective, the Eye of the Beholder is esteem'd a Point, from whence Rays are suppos'd to proceed to every Angle of the Object. The Wall or Canvas to be painted (which we shall here call the *Section*) is imagin'd to intervene at right Angles to the Axis of the said Rays, and, by dissecting them, to receive the Appearance of the Object, in greater or less Proportion, as the Section is more or less remote from the Point of Sight. Our Author's Rule is, That the Distance of the Eye ought to be equal to the greatest Extent of the Object, whether in Length or Height: As, to view a Building that is a
hundred

P R E F A C E.

hundred Foot long, and fifty high ; he would have the Distance a hundred Foot : To view a Tower sixty Foot wide, and a hundred and fifty Foot high ; the Distance should be a hundred and fifty Foot. This Distance is not strictly to be understood of the Space between the Eye and the Object, but of the Space between that and the Section, the Plan of which our Author calls the Line of the Plan, or Ground-line ; for it's often requisite, that the Section be plac'd at some Distance before the Object, on account of Projectures of Cornices, and other Parts of the Work that advance, as in the Eighth Figure.

THE Place of the Eye, with respect to its Height above the Ground, ought to be such, as is most natural and agreeable to the Object. Thus in *Architecture*, the Basements and inferior Parts of a Building are improper to be set above the Eye, and their Cornices and Entablatures have but an ill Effect when below it. *General Perspectives* indeed require the Sight to be taken at a Birds View ; and on other Occasions the Place of the Eye may be vary'd : but the best and most general Rule is, not to exceed five or six Foot Height above the Ground. The Height of the Eye above the Ground, thro' which a Line is drawn, call'd the *horizontal Line*, is set on by the same Scale of Proportion, as the Design bears to the real Work ; and the Point of Sight so plac'd therein, as may render the Object most agreeable. From the Point of Sight, either on one or both sides in the horizontal Line, you are to set, by the same Scale, the Distance you stand from the Section. And by means of these Points of Sight and Distance, and the Measures of the Parts brought on the Lines of the Plan and Elevation of the Section, by the same Scale ; all the Examples of this Volume are reduc'd into Perspective ; as is manifest on Inspection of the Figures.

WHAT we would add, by way of Advice, is,

I. THAT you very carefully observe, what the Author understands by *Breadth*, *Length*, and *Height*, in his Explanation of the Fifth Plate, before you proceed to practise on any Figure ; otherwise you'll certainly misunderstand him ; especially in the Third Figure.

II. THAT the Rules of the Tenth and Eleventh Figures be particularly regarded, for avoiding Confusion in the Plans and Uprights.

III. THAT from the Disposition of the Perspective-Plans and Uprights, with respect to the finish'd Pieces in the Twelfth and many following Figures, you would observe, with what Dispatch the said Pieces may, without the Help of Compasses, be delineated by your Drawing-Square ; viz. the Perpendiculars from the Perspective-Plan, and the level Lines from the Perspective-Upright, or Section.

IV. THAT you would accustom yourself in Works that have many Lines, to make the Perspective-Plans and Uprights for each Part distinct, so as to prevent all Danger of Confusion. Thus you may have one Plan and Upright for the Basement of a Building ; and when that is drawn on your finish'd Piece, remove them, and place those of the Body of the House ; and when that's complete, do so by the *Attick*, &c. always observing so to place the Plan below, and the Upright on one side of your neat Draught,
that

P R E F A C E.

that your Drawing-Square may command each of them ; which will mightily shorten your Work.

V. THAT the Author's Advice of taking the Figures in Course, be strictly follow'd in the Practice ; which will be a great means to render the Whole easy and pleafant.

THIS is the Sum of what we thought most proper to advertife you ; and have only this farther to request, That if any Mistakes may have escap'd the Press undiscover'd, as we well hope there are few or none, you will favourably correct and pardon them.

MONITA

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MONITA ad TYRONES.



CONCINNITATEM ac *symmetriam* optice delineationes ædificiorum habere nequeant, nisi utramque mutuentur ab Architectura. Proinde necesse est, ut in istius graphide ac intelligentia te aliquandiu exerceas, donec uniuscujusque elevationis vestigium formare didiceris, ex eoque eruere sectionem totius longitudinis, ut in Opere toto videre est, præsertim figuris sexagesimaoctava & septuagesima. Siquidem ex vestigio & ex sectione derivatur in opticas imagines congrua rerum singularum profunditas.

Subjiciam his consilium summi momenti; videlicet, egregiè intelligas oportet figuram secundam, priusquam progrediaris ad tertiam, idemque de cæteris dictum velim; nam singulas eo dispo-
suimus ordine, ut quæ præcedit, necessaria sit ad percipiendas eas quæ sequuntur. Si aliqua sint in explicatione, quæ initio non intelligas, ipsum schema sapius diligenter inspicias; ac vicissim si aliqua desint in schematibus, ex declarationibus ea supplebis. Lapsus verò quos deprehenderis, facile pro tua benignitate, mihi, ut spero, condonabis.

ADVICE to BEGINNERS.



THE Perspective of Structures here treated of, can have no Grace or Pro-
portion, without the Help of Architecture. 'Tis therefore absolutely ne-
cessary, that you employ yourself for some time in Drawing, and the
Study of that Art; till you can readily describe the Plan of any Upright,
and from thence project the Section or Profile, as is shewn through the
whole Course of this Work; and more particularly, in the Sixty-eighth
and Seventieth Figures: Forasmuch as the proper Depth of each Part of
the Perspective, is determin'd by the Plan and Profile thereof.

I shall add this one thing more, which is indeed of the last Importance; to wit, that you endeavour to understand the Second Figure thoroughly, before you proceed to the Third; and so of the rest: they being dispos'd in such Order, that the Knowledge of the preceding Figure is always necessary to a right Understanding of that which follows. If you meet with any thing which at first seems difficult in the Description, a diligent Inspection of the Figure may relieve you: And on the other hand, if you find not in the Figure every thing you desire, you may have Recourse to the Explanation. What Errors you discover in the Work, I hope you'll generously overlook and pardon.

Lectorem Perspectivæ studiosum.



RS Perspectiva, oculus, licet sagacissimum inter sensus nostros exteriores, mirabili cum voluptate decipit; eademque necessaria est iis, quibus in pingendo, tum singulis figuris positionem ac deformationem suam congruè tribuere, tum colores & umbras, magis vel minus intendere aut remittere, prout oportet, curæ est. Ad id autem sensum sine sensu illi perveniunt, qui solo studio Graphidis non contenti, singulis Architecturæ Ordinibus exactè deformandis assueverint. Nihilominus, inter multos qui opus huiusmodi magno impetu aggressi hucusque fuerunt, paucos numeramus, qui animum ipso statim initio non desponderint, ob magistrorum librorumque penuriam, ordinatè ac perspicuè docentium opticas projectiones, à principiis huius artis, usque ad omnimodam perfectionis consummationem. Quum autem sentiam, longà multorum annorum exercitatione, me non minimam facilitatem in hac disciplina mihi parasse: censeo Studiosorum voluntati me satisfactorum, eorumque profectui consulturum, si methodos expeditissimas in lucem proferam, ad singulorum Architecturæ Ordinum opticas delineationes perficiendas, adhibita communi regulâ, ex qua omnia linearum occultarum offendicula sustulimus. Deinde, si tempus & vires ad aliud Opus conscribendum Bonitas Divina dederit, projectiones quasvis absolvemus regulâ qua in præsentia uti soleo, ac multò facilior & universalior est regulâ communi & vulgata, quamvis hæc sit fundamentum alterius. Itaque, Lector studiose, constanti animo negotium tuum suscipe; ac lineas omnes tuarum operationum, ad verum oculi punctum ducere, ad gloriam scilicet DEI O.M. tecum omnino decerne. Sic votis honestissimis, ut auguror tibi ac spondeo, feliciter poteris.

T O

The Lovers of Perspective.



THE Art of PERSPECTIVE does, with wonderful Pleasure, deceive the Eye, the most subtle of all our outward Senses; and is very necessary to be known of all, who in Painting would give a due Place and Proportion to their Figures, and more or less Strength requisite to the Lights and Shades of the Picture. This might be insensibly attain'd, if Persons, not content with the Study of Drawing only, would accustom themselves exactly to delineate the several Orders of Architecture. Nevertheless, among many who have hitherto vigorously undertaken this Work, there have been but very few, who have not been in a manner quite discourag'd, through want of Masters and Books to teach them clearly and methodically the Rules of Perspective-Projections, from the first Principles of the Art, to the entire Perfection thereof. Wherefore, apprehending that by long and constant Practice in Works of this kind, I had acquir'd a Method to facilitate the same; I judg'd it might be for the Satisfaction and Advantage of the Studios, to publish the shortest way for designing in Perspective the several Orders of Architecture, by a common and easy Rule, free from the Incumbrances of occult Lines. But if it please God to give me Life and Health to compose another Book, I shall therein shew the Method of putting Works into Perspective by the Rule I make use of at present, which is more easy and general than the common way, though this be the Foundation of the other. Therefore, Reader, my Advice is, that you chearfully begin your Work, with a Resolution to draw all the Lines thereof to that true Point, the Glory of GOD; and I durst predict, and promise you good Success in so honourable an Undertaking.

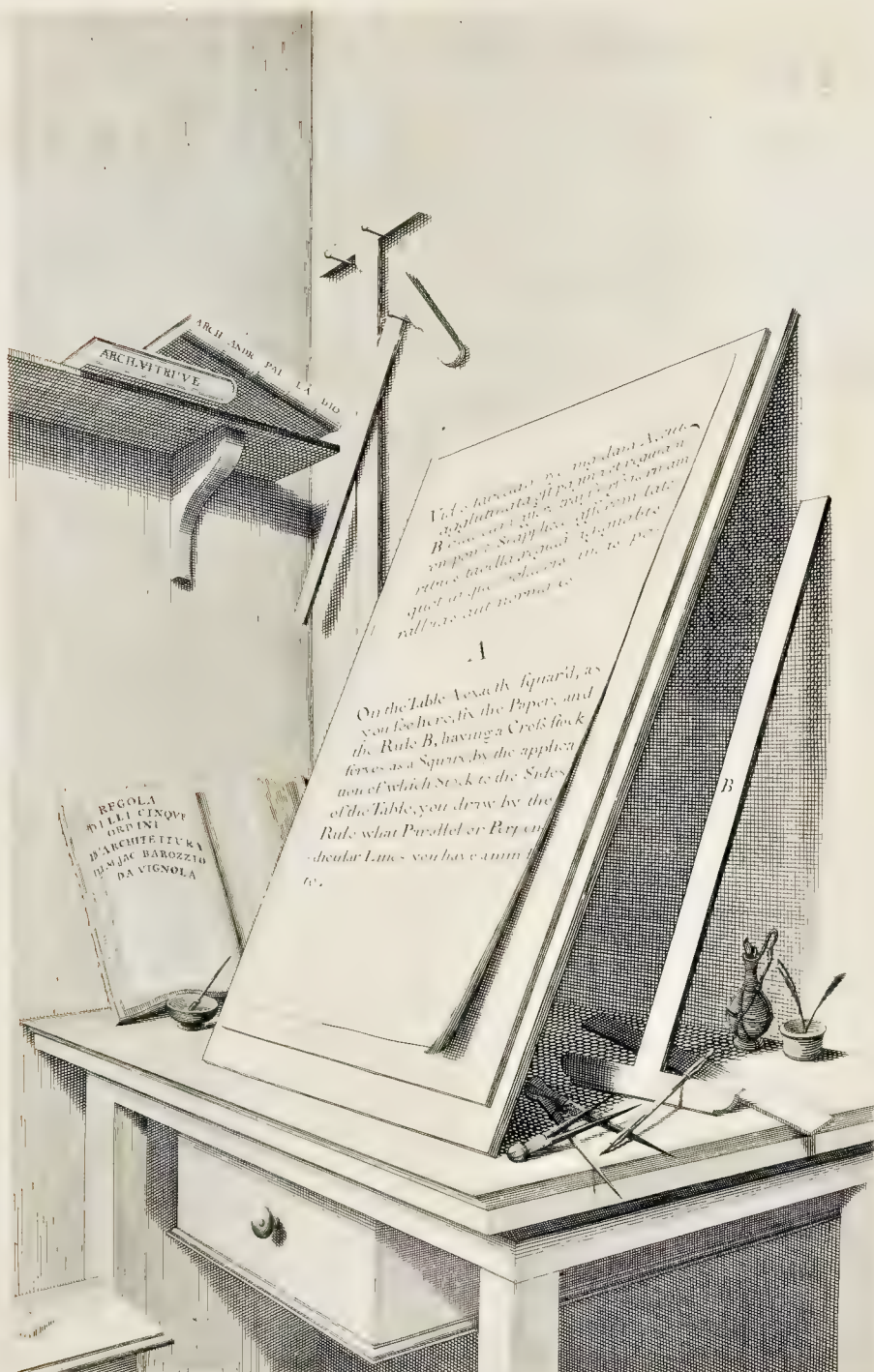
THE

Approbation of this Edition.



T the Request of the Engraver, We have perus'd this Volume of PERSPECTIVE ; and judge it a WORK that deserves Encouragement, and very proper for Instruction in that ART.

*Chr. Wren,
J. Vanbrugh,
N. Hawksmoor.*



P O Z Z O's

ARCHITECTURE

I N

PERSPECTIVE.

FIGURA PRIMA.

Explicatio linearum Plani & Horizontis, ac Punctorum
Oculi & Distantiae.



T principia Perspectivæ facilius intelligas, pono tibi ob oculos Templum, in cuius interiori facie, præter cætera, pingendum sit aliquid ad Perspectivam pertinens. Templi huius vestigium geometricum est A, elevatio geometrica in longum est B, in latum est C. In A est locus Hominis aspicientis lineam DE, cui paries pingendus incumbit. In B idem Homo ex eadem distantia intuetur lineam FG, quæ refert elevationem parietis. In figura C supponimus Hominem confidere à regione ipsius parietis: easdemque proportionibus mensuraram translatas esse ex vero pariete in figuram C, quæ ipsum in parvo representat.

Prima ergo linea HI dicitur linea terræ vel plani, ex quâ incipit, eidemque incumbit adificium. Secunda linea NON priori parallela, dicitur horizontalis, in quâ ponitur O punctum oculi, & N punctum distantie. Duo autem puncta distantie à nobis posita sunt, ut unum adhibeas ex quâ parte volueris; nam ad figuras optice contrahendas sufficit unum punctum distantie: nec fieri potest alia optica delineatio, quin primo loco designentur due parallele, una plani seu terræ, altera horizontis, notando in lineâ horizontis, punctum oculi, seu opticum, & punctum distantie. Porro unam eandemque rem triplici Schemate representare oportuit, ut videas, locum ex quo aspicienda est figura C esse punctum N unius ex relictis NO, quam concipere debemus veluti normaliter infixam in O; ac distantiam inter O & N eandem esse debere cum distantia inter A & DE, inter B & GF.

In picturis multum spatii occupantibus, punctum oculi poni solet in medio lineæ horizontalis: atque ubi altitudo picturæ sit major latitudine, distantia NO fiet equalis altitudini. Si latitudo picturæ sit major altitudini, distantia NO fiet equalis latitudini; ita enim unico intuitu totum picturæ spatium comprehendere poterit. Porro quavis eadem distantia diverso modo adhibeatur in vestigio A, & in elevationibus B & C; nihilominus sectiones visualium cum pariete vestigii A, & elevationis B, omnino conspirant cum sectionibus visualium figuræ C.

Item si velimus ut spectatori in A & B paries depictus videatur distare à lineis DE & GF, quanta est longitudo quadrati P, cuius elevatio est Q; ex punctis A & B fiant visuales ad puncta extrema quadrati, notando sectiones visualium cum pariete DE & GF, qui ab aliis vocatur velum, vitrum diaphanum, sectio, tela, vel tabula. Invenies autem, lineas RS ac TV esse æquales, ac similiter lineas XZ & YK; & sic de aliis.

The First Figure.

Explication of the Lines of the Plan and Horizon, and of the Points of the Eye
and of the Distance.



HAT you may the better understand the Principles of Perspective, here is presented to your View a Temple, on the inner Wall of which, amongst other things, one would paint something in Perspective. The Geometrical Plan of this Church is A, the Geometrical Elevation, or Upright, lengthwise is B, breadthwise is C. In A is the Place from whence a Man beholds the Line DE, which is the Plan of the Wall that is to be painted: In B the same Man, from the same Distance, looks upon the Line FG, that represents the Elevation of the Wall. In Fig. C, the Man is supposed to stand opposite to the said Wall; and this Figure contains, in Little, the very same Proportions of Measures transferr'd from the real Wall.

The first Line therefore HI is call'd the Ground-line, or Line of the Plan, at which the Edifice begins, and on which it stands. The second Line NON, parallel to the former, is call'd the Horizontal Line, wherein is plac'd O the Point of the Eye, and

N the Point of the Distance. Two Points of Distance are here laid down, that you may make use of which you please; for that on one Side only is sufficient for the fore-short'ning Figures in Perspective: Neither can any Optick Delineation, or Perspective, be described, without first making two Parallels; one of the Plan, or Ground-line, the other of the Horizon; marking, in the Line of the Horizon, the Point of the Eye, or Sight, and the Point of Distance. It was thought besides expedient to put one and the same Thing into three Schemes or Designs, to let you see, that the Place, from which the Figure C is to be look'd upon, is the Point N, one of the right Lines NO, which must be conceived as fixt at right Angles into O; the Distance ON being the same as that between A and DE in the Plan, or between B and GF in the Upright.

In Pictures taking up a great deal of Room, the Point of Sight ought to be made in the middle of the Horizontal Line; and where the Height of the Picture happens to be greater than the Breadth, the Distance NO must be made equal to the Height. If the Breadth of the Picture exceed the Height, the Distance NO must be made equal to the Breadth: For so will the Extent of the Picture be the better comprehended, or receiv'd, at one View. And altho' the same Distance may seem to be used in a different manner in the Plan A, and in the Elevation B, from what it is in C; nevertheless the Sections of the visual Rays, with the Wall of the Plan A, and of the Elevation B, have a perfect Correspondence with the Sections of those of the Figure C.

Now, if to the Spectator in A and B, we would have the farthest Part of the Work seem to recede from the Lines DE and GF, as much as the Square P does, whose Elevation is Q; draw from the Points A and B, the visual Rays to the extreme Points of the Square P and Q; noting the Sections they make with the Walls DE and GF; which by some is call'd the Veil, Transparent Medium, Section, Cloth, or Table: and you'll find RS equal to TV, XZ equal to YK; and so of the rest.

FIG. I.





Fig. II.



b

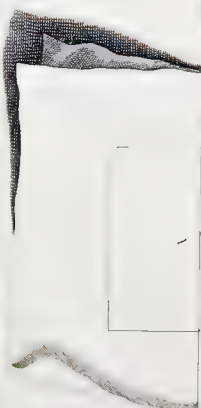


FIGURA Secunda.

Modus delineandi opticè Quadratum.

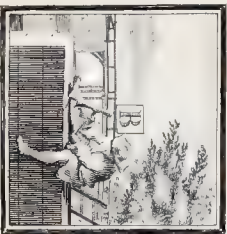


NOTE descriptionem opticam quadrati A, quod fingimus delineatum esse in papyro separatâ, ducende sunt due linee parallele; altera plani, altera horizontis, ut iam docuimus; notando in linea horizontis punctum oculi O, & punctum distantie E. Tunc transferatâ in lineam plani latitudinem ac longitudinem ipsius quadrati A, ita ut linea CB sit equalis latitudini, & DC sit equalis longitudini. Ex punctis B & C sunt visuales BO, CO ad punctum oculi; ex puncto D sit recta DE ad punctum distantie. Demum ubi visuales CO secut rectâ DE, sit GF parallela ad CB; habesque quadratum opticè contractum.

Compendium temporis & laboris facies, præsertim in schematibus quæ abundant lineis, si charitatem in medio complicaveris, eademque utaris, ut latitudinem ac longitudinem quadrati transferas in lineam plani.

The Second Figure.

Manner of delineating a Square in Perspective.



BEFORE the Square A, which is supposed to be drawn on a separate Paper, can be laid down in Perspective, two parallel Lines must be drawn; one of the Plan, the other of the Horizon, as is already intimated; noting in the Horizontal Line the Point of Sight O, and the Point of Distance E. Then, when the Length and Breadth of the Square A shall be transferred into the Line of the Plan, so that the Line CB be equal to the Breadth, and DC be equal to the Length, let the visual Lines BO, CO be drawn from the Points B and C to the Point of Sight O, and the right Line DE from the Point D to the Point of Distance. Lastly, where the Line DE cuts the Visual CO, make GF parallel to CB; and you have the Square Optically contracted, or fore-shorten'd in Perspective.

To spare Time and Pains, especially in Figures that abound in Lines, fold your Paper in the middle, and make use of it to transfer the Breadth and Length of the Square, into the Line of the Plan.

FIGURA TERTIA.

Optica delineatio rectanguli, alterâ parte longioris.



Altitudo BC rectanguli A ponatur in linea plani, adhibito circino, vel chartulâ complicatâ; & ex punctis B & C fiant visuales ad O, punctum perspectivæ. Tum papyro ex altera parte iterum complicatâ, notetur longitudo CD rectanguli; ducendo tum rectam DE ad punctum distantie, tum rectam FG parallelam ad BC, quæ complebit opticam delineationem rectanguli.

Altera figura ostendit complicationem cruciformem papyri, quæ adhiberi potest in delineandis rectangulis, seu latitudo eorum sit major longitudine, aut vice versâ; seu latitudo & longitudo sint æquales.

The Third Figure.

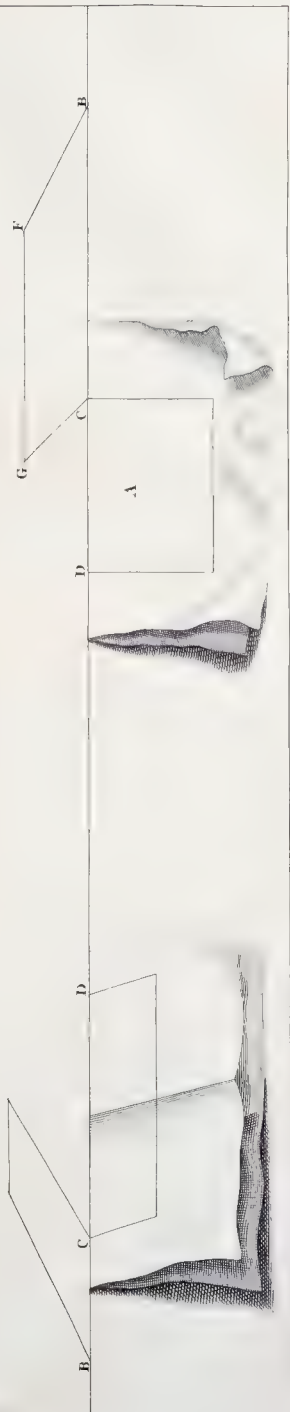
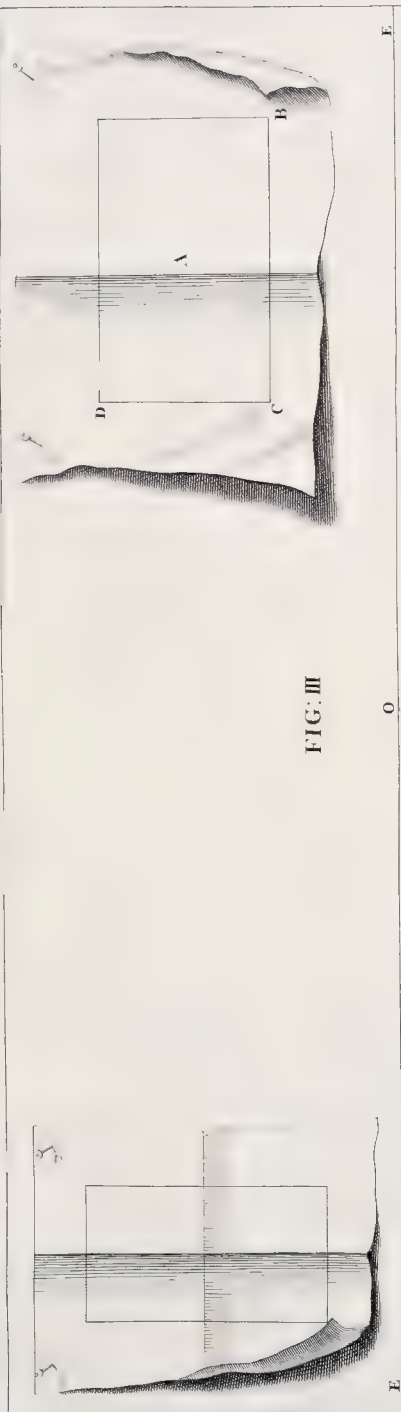
The Delineation of an Oblong Square in Perspective.

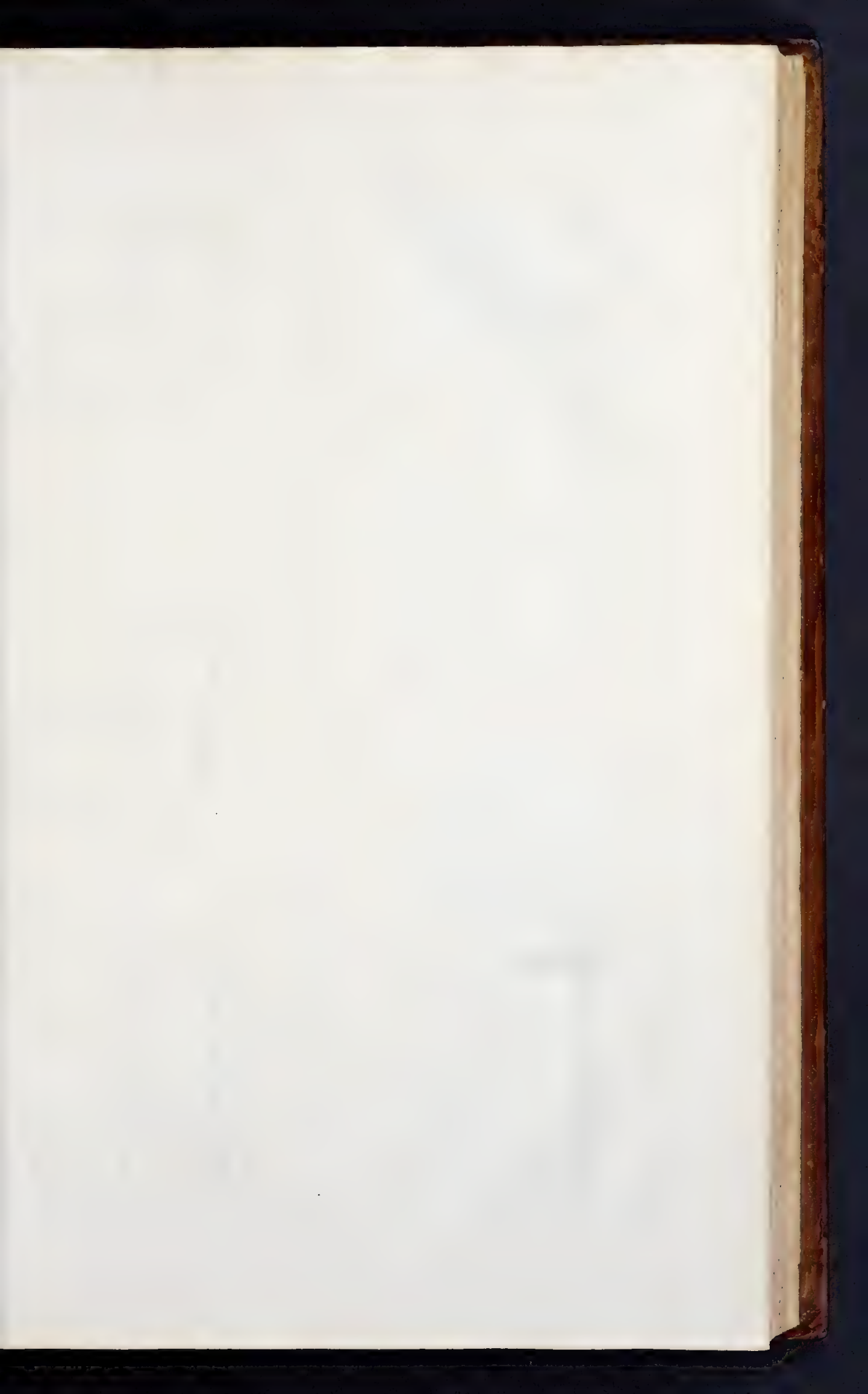


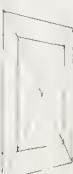
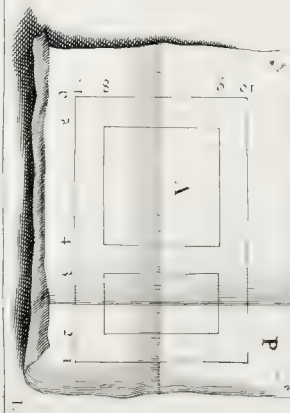
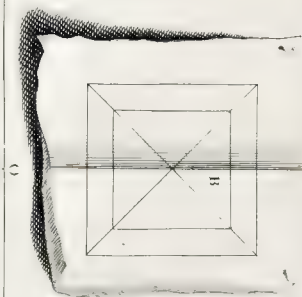
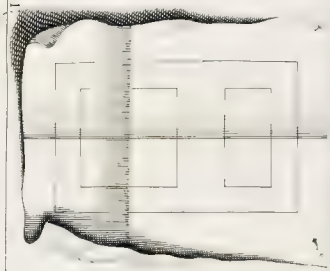
ET the Breadth BC of the Square A, be plac'd in the Line of the Plan, by the Compass, or a folded Paper, and from the Points B and C, make the Visuals to the Point of Sight O. Then fold your Paper cross-wise, and mark CD the Length of the Square, drawing the Line DE to the Point of Distance, and the Line FG parallel to BC, which will complete the Optick Delineation of the oblong Square.

The other Figure shews the Folding of the Paper cross-wise, which is of ready use in delineating Squares, whose Breadth exceeds their Length, or *vice versâ*; or whose Length and Breadth are equal.

FIG. III







N. S.



FIG. IV.

FIGURA QUARTA.

Optica descriptio quadrati duplicis.



*Ad incipiens si in compendio par-
turi complicate. Nam cum
admoecendo linee plani, nullo
negotio notare poteris puncta
1, 2, 3, 4, 5, 6, linearum vi-
sualium, que ducentur ad O
punctum perspectivæ. Exinde complicatâ rir-
sum echartulâ in crucem ad P, notabuntur hæc
puncta; 7, coincidens cum puncto 6, nisi qua-
dratum distet à linea plani; 8, 9, 10. Ductis
autem rectis ex 8, 9, 10, ad punctum E, ubi se-
cant visualem 6, 7, sicut parallele, eritque com-
pleta delineatio.*

*In medio quadrati B, aliud quadratum facile
describetur, ducendo diagonales seu diametros ab
angulo ad angulum, ut in figura.*

The Fourth Figure.

The Optical Delineation of a double Square.

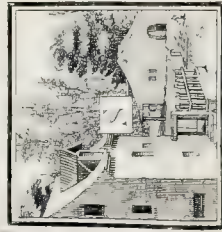


HERE you'll find the Ad-
vantage of your folded Pa-
per; for, applying it to the
Line of the Plan, you rea-
dily mark the Points 1, 2,
3, 4, 5, 6, of the visual
Lines, which must be drawn to the Point of
Sight O. Then folding the Paper cross-
wise, as in P, you mark the Points 7, 8, 9,
10, placing the Point 7 on that of 6, un-
less you would have the Square removed
within the Line of the Plan. Then from
8, 9, 10, drawing Lines to the Point of
Distance E; where they intersect the Line
6, 7, O, draw Parallels to the Line of the
Plan; and your Work is done.

Within the Square B, you may easily
inscribe another Square, by help of the Di-
agonals; as may be seen in the Figure.

FIGURA QUINTA.

Vestigia quadratorum, cum elevationibus.



HYPOTHESIS ita quæ jam diximus de Contradi-
ctione optica Quadratorum, nonnullum est, vestigi-
um primi Quadrati distans a linea plani spatio BA o-
mnino contiguo; quæ linea BD habet ad visuales
AO, distantiam BA. Eodem modo Quadratus
hæc distantiam distat à linea plani spatio EA, & sic de
ceteris.

Unde apparet, etiam quod si Quadratus linea
longitudinis esse partes visuales, lineas vero horizontales, & parallelas lineas pla-
ni, & in primo Quadrato duas ex partibus, in quibus linea BD, CD, rectan-
gulus ad punctum distantes, sicut visus in AO.

Sub singulis vestigiis Quadratorum, delineamus alia omnino similia, per que
parvo labore sunt tres bases, erigendo ad libitum duas primas perpendiculares æ-
quales; ac duendo tum duas visuales ad punctum oculi O, tum reliquas, ut in
figura. Suppositionem est autem, geometricam altitudinem visibiles ut desunt ex
lineis normalibus ad lineam plani; quoniam linea latitudo & longitudine geometricæ
desumuntur ex eadem linea plani.

Tres alie bases inferiores formatur sine lineis oculis ex vestigio & ex eleva-
tione longitudinalis optice deformati, aliterque solæ altitudines ac latitudines angu-
lorum. Nonnulli altitudines ut diligens distinctionem cupisset, anguli à linea plani;
nomine latitudinis ut diligens distinctionem cupisset, anguli à linea altitudinis normalis ad li-
neam plani; dummodo hæc normales eadem habeant positionem respectu basium, &
respectu vestigiorum & elevationum. Quæ latitudines autem per convenientiam distan-
tias FG, & latitudinis HI, que duobus in elevationibus, ut per punctum unum, & eadem in
duas bases; ita inveniantur ceteri tum in ea, tum in reliqua.

The Fifth Figure.

Plans of Squares, with their Elevations.



SIDES what has been already said of the
fore-shortning of Squares in Perspective, it is
convenient to observe, That the Foot of the
first Square is here set within the Line of the
Plan, as much as the Space BA optically con-
tracted; because the Line BD has the Distance
BA from the Visual AO. And in like manner,
the second Square is distant from the Line of
the Plan the Space EA; and so for the rest.

I would have you observe in all these Squares, That by the Length I al-
ways understand part of the visual Lines, and by the Breadth those paral-
lel to the Ground-line; which in the first Square are drawn from the
Points in which the Lines BD, CD, tending to the Point of Distance, in-
tersect the Visual AO.

Under the Plans of these Squares are described three others just like them,
which are easily converted into three Bales, by erecting, at pleasure, the
two first Perpendiculars of equal Height, and thence drawing two Visuals
to the Point of Sight O, which also bound the rest, as in the Figure. Ob-
serve also, That the Geometrical Height of every thing is to be set per-
pendicularly from the Ground-line, or Line of the Plan, as the Geometri-
cal Length and Breadth are also placed on the same Line.

The three other Bales below are formed without the Help of Occlu-
sion, by making use only of the Heights and Breadths of the Angles,
taken from the Perspective Plan and Upright. By Height I understand the
Distance of each Angle, or Corner, from the Ground-Line; By Breadth,
the Distance of an Angle, or Corner, from any Line perpendicular to the
Ground-line; provided these Lines have always the same Place in respect
of the Bales, as they have in respect of the Perspective Plan and Upright.
And as, by the Help of two Compasses, the Height FG, and the Breadth
HI determine the Corner of the first Bale; so in like manner, are found
the Corners of the other Bales.

FIG. V.

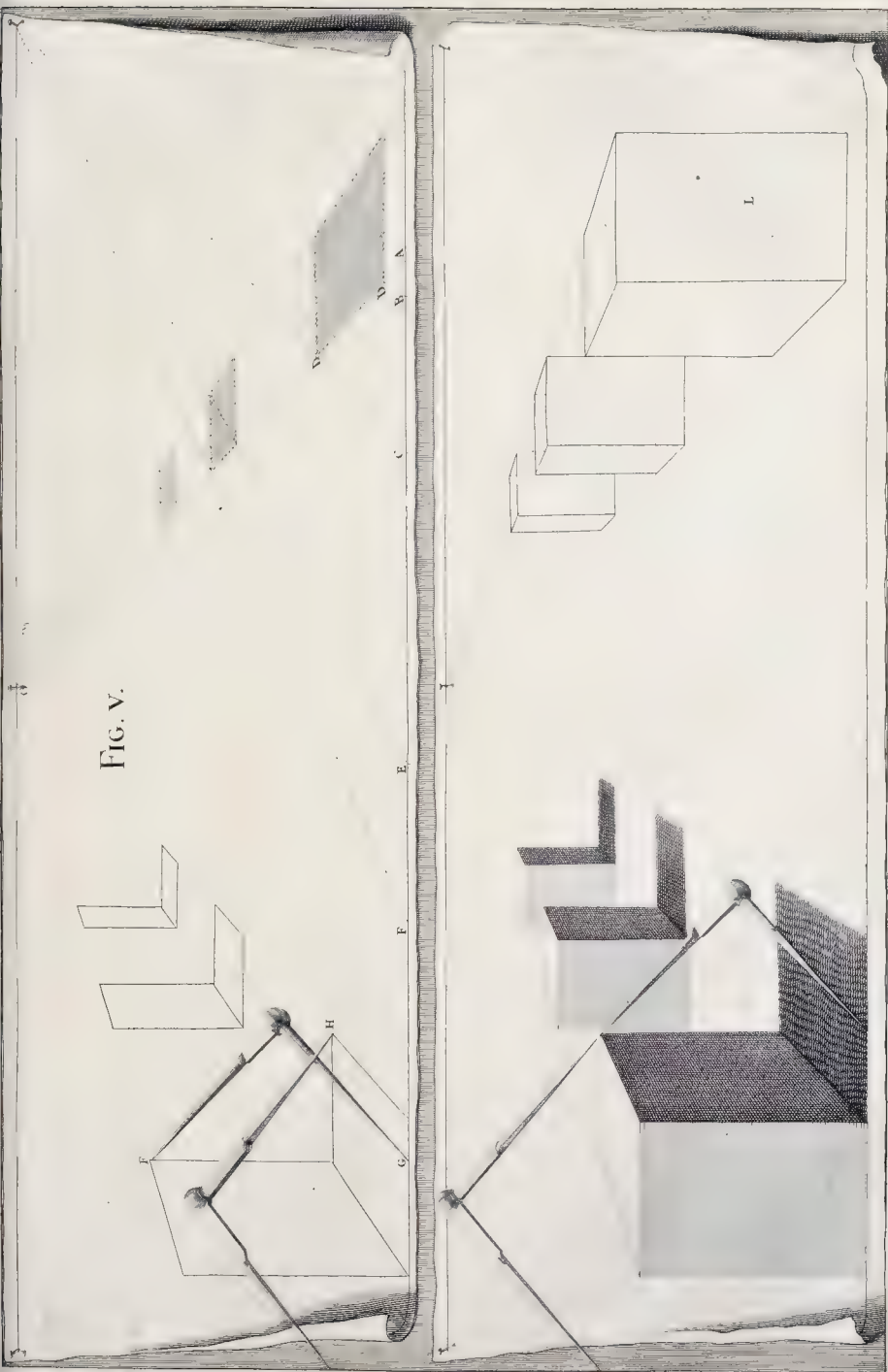






Fig. VI

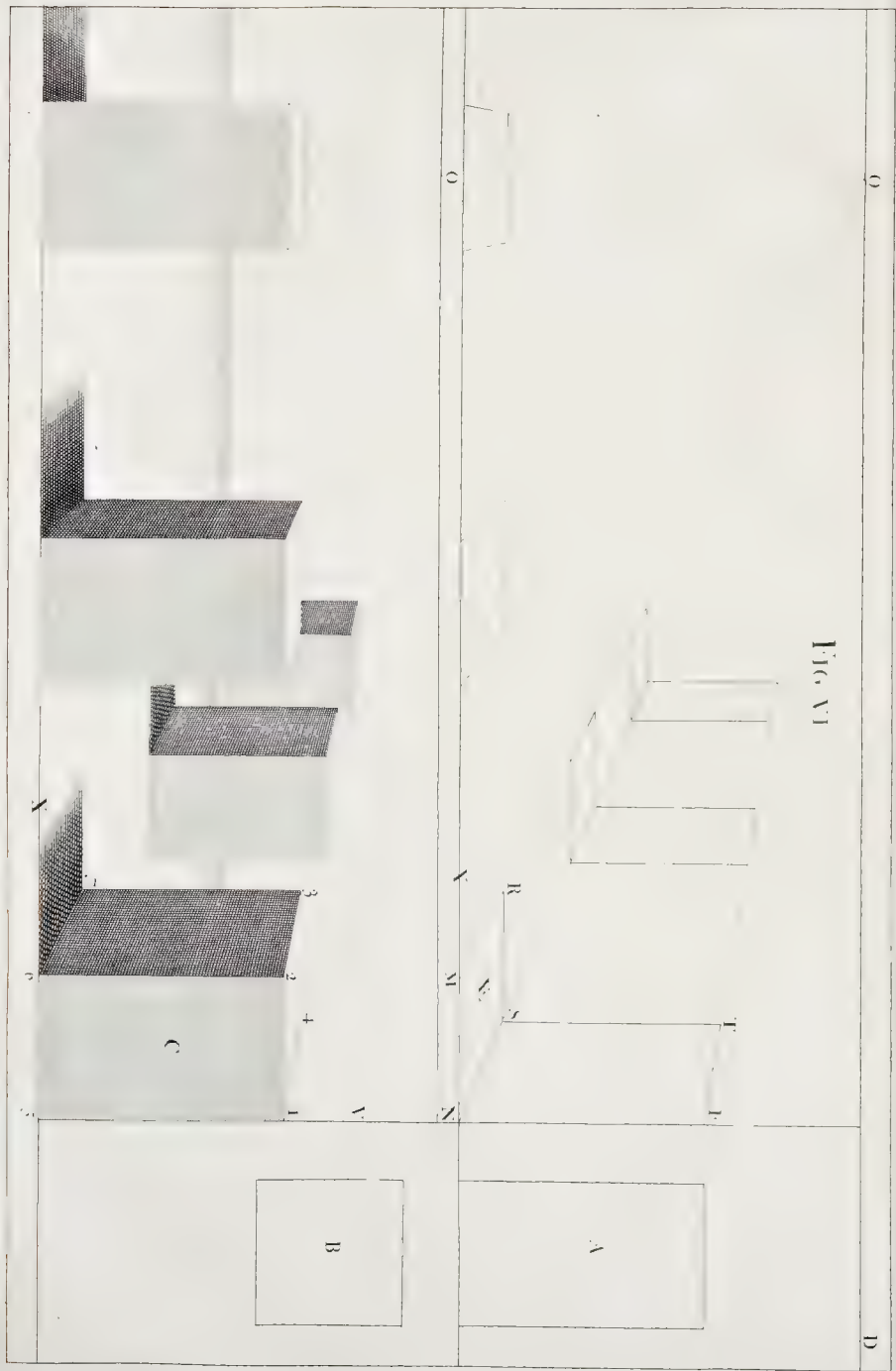
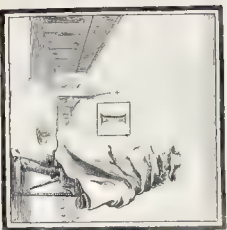


FIGURA SEXTA.

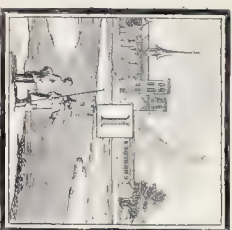
The Sixth Figure.

Modus opticae delineationis, absque
lineis occultis.



N hanc figuram sextam, vestigium geometricum *B* seorsum posui ab elevatione geometrica *A*, ut deinceps faceremus. Vestigium *B* optice contractum in *E* est *NMRS*; elevatio contracta longitudo vestigii est *F T S N*. Posito autem quod altitudines *F N*, 1, 5, 2, 6, sint aequales; latitudines *N M*, 1, 2, 5, 6, sint aequales; rectae *F N*, 1, 5, 5, 6, sint in linea *X* plani; rectae *F N*, 1, 5, 5, 6, bays *C* habeant eandem elevationem seu distantiam à linea *X* plani, quam habet angulus *T*: anguli 1 & 2 habent elevationem, quam angulus *F*: anguli 3 & 7 habent eandem latitudinem seu distantiam à perpendiculari *V*, quam habet angulus *R*: anguli 2 & 6 habent eandem latitudinem, quam habet angulus *M*.

The Manner of designing in Perspective, without
occult Lines.



N this sixth Figure, I have designed the Geometrical Plan *B* separately from the Geometrical Elevation *A*, as I shall always do hereafter. The Plan *B* optically contracted, or put in Perspective, in *E*, is *NMRS*; the Elevation of its Length in Perspective is *F T S N*. Then supposing the Heights *F N*, 1, 5, 2, 6, equal; and the Breadths *N M*, 1, 2, 5, 6, equal; the Lines *N M*, 5, 6, to be in the Line of the Plan *X*; and the Lines *F N*, 1, 5, in the Perpendicular *V*: the Angles 3 and 4 of the Base *C* have the very same Elevation or Distance from the Line of the Plan *X*, as has the Angle *T*: the Angles 1 and 2 have the same Elevation with the Angle *F*: the Angles 3 and 7 have the same Breadth or Distance from the Perpendicular *V*, as the Angle *R* has: the Angles 2 and 6 have the same Breadth, as the Angle *M* has.

FIGURA SEPTIMA.

Aliud exemplum vestigii geometrici,
cum elevatione longitudinis.



*I elevatio per hoc difficta in quatuor partes
fuit vestigium A cum suis dispositionibus longitudi-
nis I D & latitudinis C D. Elevation vero di-
visionis latitudinis habet in I F elevatio B que
pertingit usque ad X. Porro ad contrahendum o-
pticam vestigium attribuitur papirus complicata in la-
titudinem & in longum, transferendo in lineam planam la-
titudinem & longitudinem vestigii. Deinde nullo
ingratum fiet optica deformatio elevationis, ut clare possum est in figura. Quo-
modo autem ex vestigio & ex elevatione longitudinis optice immutatis eruat
basis initia sine lineis oculis, ex precedentibus manifestum est. Opticam ut
per assilum circum tractationem in hac methodo exercenda operam soludum ponas;
quam ex ea pendat omnis factitas delineationum optiarum.*

The Seventh Figure.

*Another Example of a Geometrical Plan and
Upright, put in Perspective.*



*OR drawing in Perspective a Pedestal, or Base,
divided into Four Parts, make the Plan A with
its Divisions of Length F D, and of Breadth
C D; and the same Divisions of Breadth I F
in the Elevation B, prolong'd to X. Then
make the Perspective-Plan, by transferring the
Breadth and Length into the Ground-line, by
means of your Paper folded cross-wise. From
which Plan the Perspective-Upright is very easily made, as may be plain-
ly seen in the Figure. How the Base below, without occult Lines, is
made from the Perspective-Plan and Upright, is manifest from what has
been said before. I could with you would be very diligent in the Pra-
ctice of this Method by the Compass; because the Dispatch of Perspec-
tive-Delineations chiefly depends thereon.*

FIG. VII.

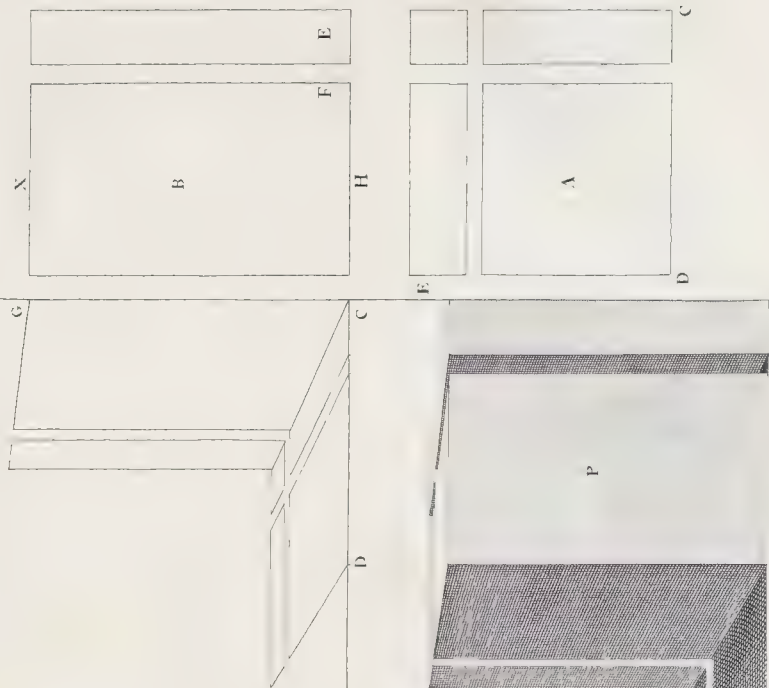




FIG. 5.

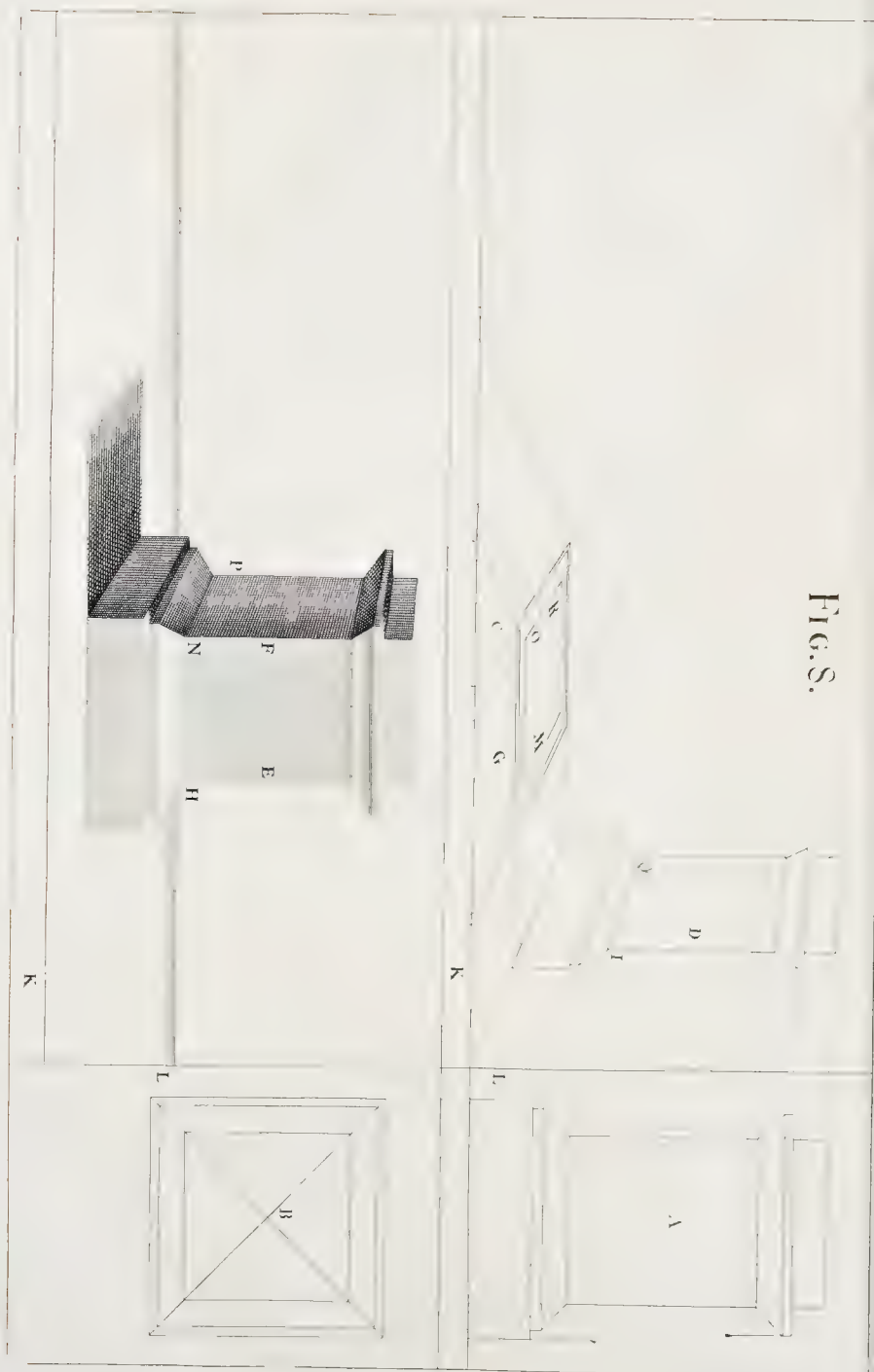



FIGURA OCTAVA.

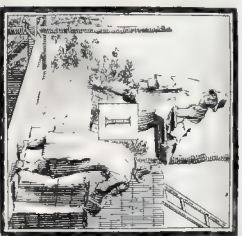
Optica projectio stylobata.



I librum facit aliterare *syloctam*, cum proferis in summo ∞ ino, incipis ab elevatione geometrica A, ducito occulas ad id necessarias, tunc velis perpendicularem L, tunc deorsum pro vestigio geometrico B, cuius distantie transierit in spatium G. Si movisue longitudinis different spatium C a mensuris latitudinis, vestigium deformationis videbitur distare a linea K plani, quantum est

The Eighth Figure.

The Projection of a Pedestal in Perspective.



F you would draw a Pedestal, with the Proje-
cture of its Cap and Base, you must begin
with the Geometrical Elevation A, by drawing
such occult Lines as are necessary, as well find-
ways to the Perpendicular L, as downwards
for making the Geometrical Plan B, whose Di-
stances must be transfer'd, and carry'd into the
Space G. If the Measures of the Length be
placed the Distance of the Space C, from thole
of the Breadth, the Perspective-Plan will then appear removed within the
Ground-line K, as much as the said Space C is. In the Construction of
the Perspective Elevation D, the Verticals drawn from the Points of the
Line L give the Lines of the Breadth; and thole of the Height are taken
from the Lines of the Perspective-Plan, as in the Figure. In delineating
the clean or finish'd Pedestal EF, the Interfection of the Breadth from L
to M, with the Height from K to J, gives the precise Place of the Cor-
ner H. The Interfection of the same Height with the Breadth LO gives
the Angle N. Lastly, the Angle P is found by the Interfection of the
Height KQ, with that of the Breadth L R.

FIGURA NONA.

Optica delineatio Architecturæ Jacobi Barozzii ; & primum, de Scythiata Ordinis Itrulici.

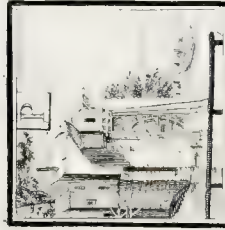


PERSPICITIVE usquam clarior emicat, quam in Architectura. Itaque tibi ab oculis puto Architecturam Jacobi Barozzii, quem à patre mathematico int II Vignola, reliquis fortasse inferiorum ; ut easque citatur elevationem geometricam singulorum quoque Ordinum, qui vocantur, Itrulicos, Doricos, Ionicos, Corinthios, & Romanos, vel Compósitos ; delineando singulas partes cujusque Ordinis in figuris grandioribus. Elevationem geometricam & hanc vestigium nos addimus ; ex vestigio autem & ex elevatione operè illustratis, eliciemus apparentias soliorum juxta regulam traditam. Exempli gratia, si delineare velis stylatam quadratam & pilam Ordinis Itrulici, præter elevationem geometricam A delineare oportet vestigium geometricum B. ex ambobus autem operè contructis formatur stylata intus D, cum anta & pila existente ad latera, accipiendo altitudines à linea plani, latitudines à linea perpendiculari ad ipsam planum. In alia delineatione posuimus pilam ex aduerso, ut eis omni modo delineandis assuefaciat.

Ad utrumque conspiciendum locutionem, præbet ut sequere sint I & 11. n. 11. modis modis : in quæ sunt singulis partibus appellata est lecta modis. Hæc nomina intelligatur partes expeditæ, in quæ dividitur linea latitudinis & altitudinis elevationem geometricam ; & lineæ Itrulicæ & Itrulicæ & altitudinis elevationem geometricam. Si visidit sint pila, Itrulicæ & Itrulicæ & altitudinis elevationem geometricam. Modulus Itrulicum Doricos triginta, vel sexaginta, & pila sunt à gnomonibus, subdividitur in partes triginta, vel sexaginta, & reliquos autem in octodecim partes sunt.

The Ninth Figure.

The Architecture of Vignola in Perspective ; and first, of his Pedestal of the Tuscan Order.



PERSPICITIVE never appears more graceful, than in Architecture ; for which Reason I present you with that of *Jacob Barozzi*, from his Country generally call'd *Vignola* ; which perhaps is more in use than any other ; and contains the Geometrical Upright of each of the five Orders, viz. the *Tuscan*, *Doric*, *Ionic*, *Corinthian*, and the *Roman*, or *Composite* ; together with a separate Delineation of the Parts of each Order, in larger Figures.

To this Geometrical Elevation we shall add the Plan, and, from both of them reduc'd into Perspective, shall draw the Appearance of Solids, according to the Rule before laid down. For Example : If you would draw the square *Tuscan Pedestal*, and its Plaster, you must, from the Geometrical Elevation A, make the Geometrical Plan B ; and from both of them reduc'd in Perspective, draw the finished Pedestal D, with that of its Plaster on the Sides, by taking the Lengths from the Ground-line, and the Breadths from a Line perpendicular to the same. On the other Side we have placed the Plaster on the Back-part, that you may practise the Drawing them in any manner.

For avoiding the Confusion of Lines, I advise you to make the Figures as much larger than ours as you can ; for which purpose there is annex'd a Scale of Modules to each Figure. By this Name we understand the equal Parts, into which the Lines of the Breadth and Height of the Geometrical Uprights, and of the Breadth and Length of the Geometrical Plans, are divided. If the Modules are small, they are subdivided into twelve Parts ; and according as they are larger, into thirty, sixty, or an hundred and twenty Parts. I have divided the Tuscan and Doric Modules into twelve Parts, and the other Orders into thirty.



Fig. 10.

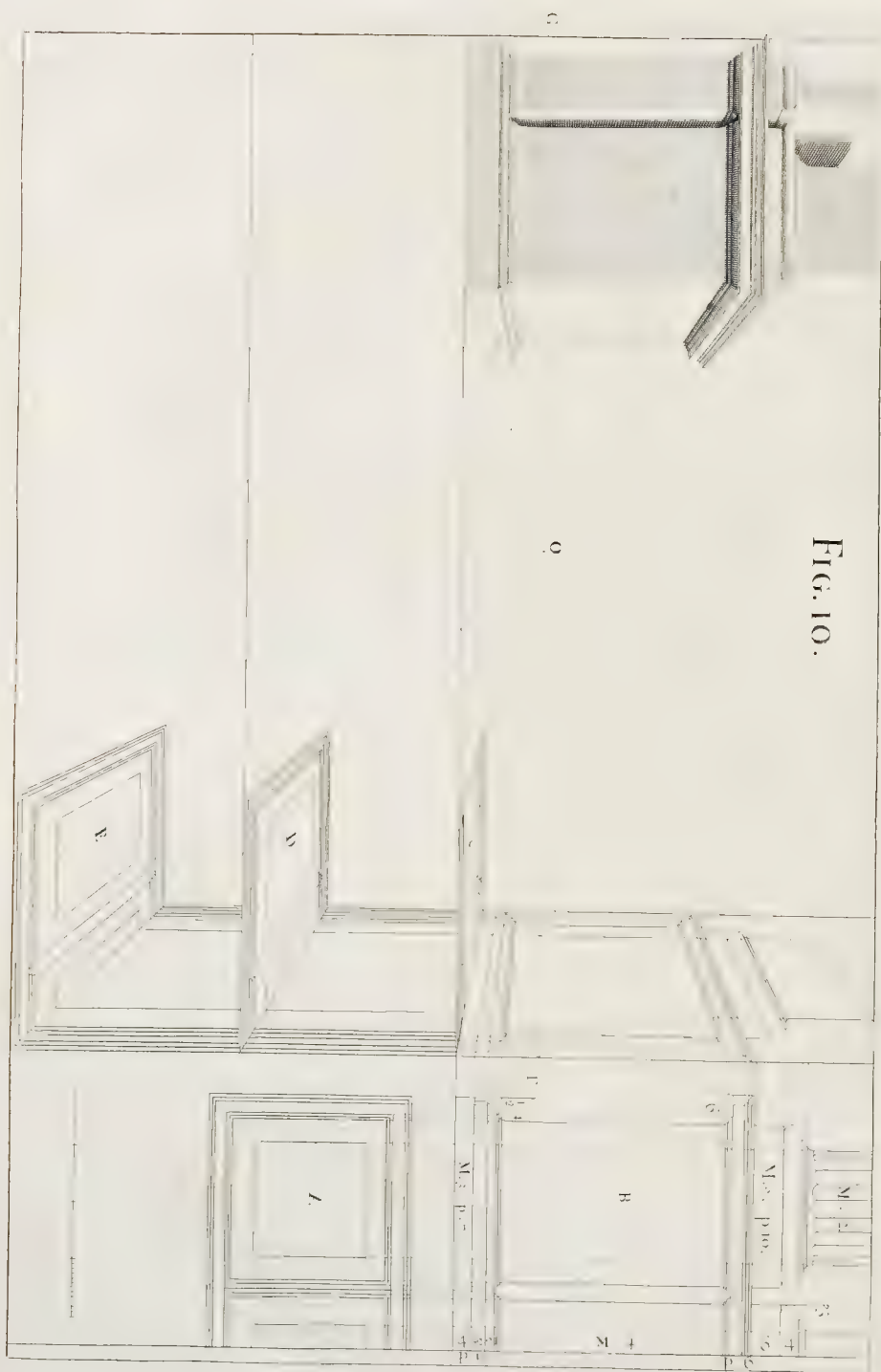
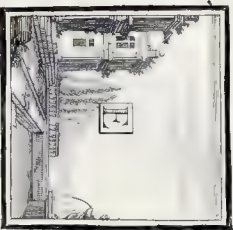


FIGURA DECIMA.

Orbis deformatio habetur Dorici; ubi de modo vitandi confusionem, et vestigis delineandis.



LETTITO concinna B sylobate Dorici continent eandem symmetriam partem que habetur apud Barozzum; ex eoque eruitur vestigium geometricum A per lineas occultas, que descendunt ex punctis terminativis præcipue projectionum. Eandem projectionum distantie transferre sunt in lineam elevationis, notando puncta que necessaria sunt ad deformandum elevationem longitudinis sylobate.

Si ob propinquitatem linee plani ad lineam horizontis, vestigium eruat confusum, sunt in distantia congrua sub linea plani alie linee planorum ipsi parallele, cum suis vestigiis. Quid autem evitamentum affert distantia maior præminori, ostendit vestigium E distinctius vestigio D. Singula hæc vestigia sunt notanda in linea cuiuslibet plani mensuras latitudinis et longitudinis vestigio A, et ducendo lineas ad eandem puncta oculi ac distantie.

Solubetatem nitidum descripsimus ex parte G, tum ex necessitate, tum ut vitaretur pro distantia FO, insuperandam esse distantiam GO penitus æqualem.

The Tenth Figure.

A Dorick Pedestal in Perspective; with the Manner of avoiding Confusion, in designing the Plans.



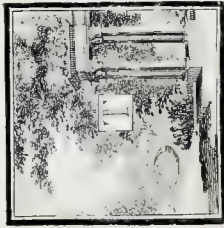
THE Geometrical Elevation B has the same Members and Proportions, as the Dorick Pedestal of Figure 5; and the Geometrical Plan A is form'd, by letting fall occult Lines from the principal Projectures of the Upright. Occult Lines are also to be continued to the Perpendicular F, from the several Members requisite for elevating in Perspective the Length of the Pedestal.

When, by reason of the too near Approach of the Ground-line to that of the Horizon, the Plan becomes thereby confus'd; draw at a convenient Distance underneath, other Ground-lines parallel to the first; together with the Plans in Perspective. And of what Advantage the Removal of the Ground-line is, is evident from the Plan E, which is much more distinct than the Plan D. Each of these Plans is made, by marking upon its respective Ground-line the Measures of the Breadth and Length of the Plan A, and by drawing Lines to the same Points of Sight and Distance, which were first assign'd.

We have placed the finish'd Pedestal on the Side G, partly for want of Room, and partly to shew, that the Point of Distance G is there made use of, GO being equal to FO.

FIGURA Undecima.

Sevelatur Imagi deformatio; ubi de vitanda confusione
in elevationibus.



HM in figura præcedenti, tunc rursus in hac, ostendimus quid agendum sit ubi vestigia AA numerum obliquum, unde oritur confusio; præcipue in locis parallelis que exhibent latitudines. Non minor difficultas interdum occurret in elevationibus longitudinis optatè deformandis; quòd videlicet, ob nimiam curvæ obliquitatem, porro non sit altitudines singularem projecturarum probè discernere ac designare. Ad seopulos istos declinandos, loco elevationis B adhibebitur elevatio C, que distinctior est, tum illà, tunc duabus intermediis D & E, ob majorem distantiam quam habet à puncto oculi.

In delineando stylobata nitido, latitudines accipiuntur ex ultimo vestigio, ponendo autem cuspidem circum in linea perpendiculari, que proxima est literæ O. altitudines accipiuntur ex elevatione C, ponendo unam cuspidem circum in linea plani, ut in præcedentibus ostension est.

The Eleventh Figure.

The same Temple in Perspective; with the Manner of avoiding Confusion
in Elevations.



See in the foregoing Figure, so in this also is shewn what is to be done, where the Plans AA lie to oblique, as to cause Confusion; especially in the Parallel-lines which give the Breadths. The like Inconvenience often happens in elevating the Lengths in Perspective; when by their too near Approach to the Point of Sight, the Contour of the several Mouldings can't be distinctly delineated: For avoiding which, instead of B you may make use of the Elevation C, which is not only more distinct than the former, but better than either of the two intermediate ones D or E, by so much as it is more remote from the Point of Sight.

In delineing the finish'd Pedestal, the Breadths are taken from the lowest Plan, by letting one Point of the Compasses in the perpendicular Line OL: the Heights are taken from the Elevation C, by placing one Point of the Compasses in the Ground-line, as has been shewn before.



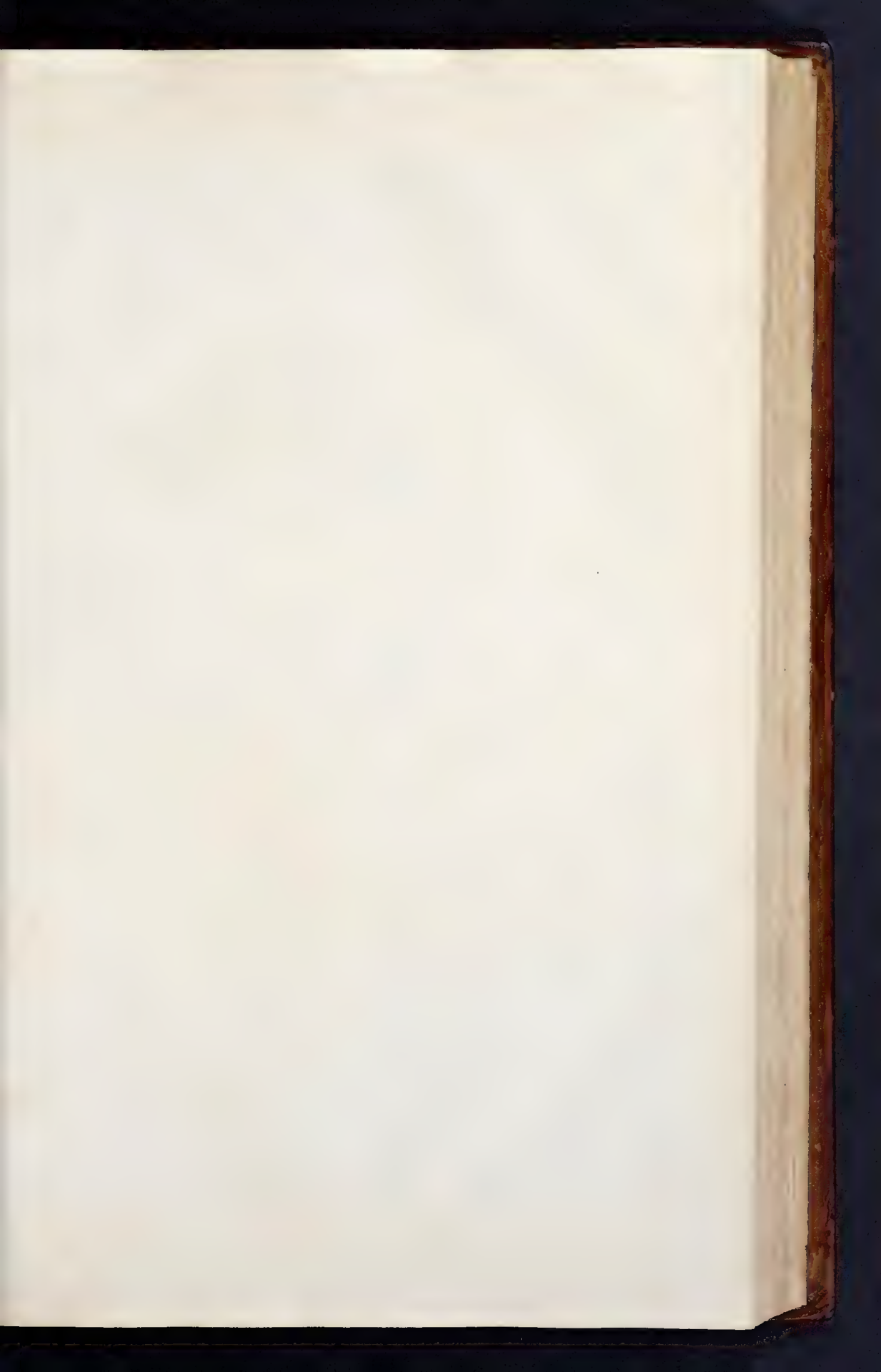


FIG. XII.

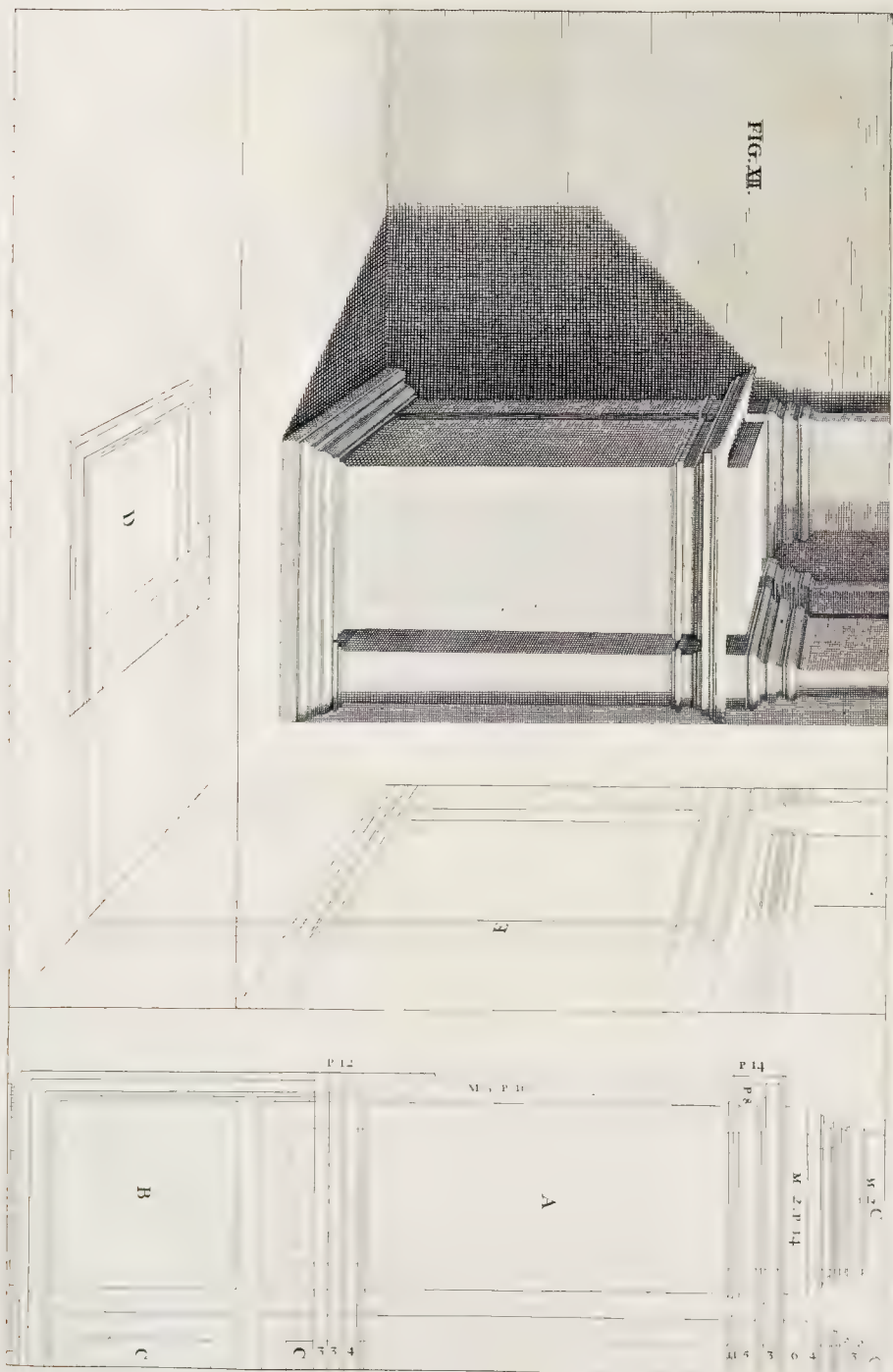
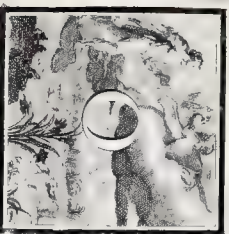


FIGURA Duodecima.

Deformatio stylobatæ Corinthii,
cum duabus pilis.



RNATUS gratiâ, stylobatæ Corinthio additæ sunt pile, quæ pone columnas locari solent. Ut autem pile clariùs appareant, columna omiſſa est, cujus deformatæ rationem nonnum tradidimus. Mensuras omnes ex Bazzio acceptas esse demonstrat ipsum schema, in quo elevatio geometrica stylobatæ est A; veſtigium ejus geometricum est B: pile CC. Veſtigium optice contractum est D. elevatio longitudinis stylobatæ optice contracta est E, ac methodo consuetâ ex iis eruetur stylobata nitidus cum suis pilis.

The Twelfth Figure.

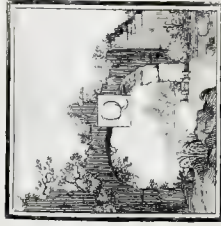
The Corinthian Pedestal, with its Pilasters,
in Perspective.



ORnaments sake, we have added to this Corinthian Pedestal the Pilasters, which are usually placed behind Columns: And that they may be the more perspicuous, have left out the Column, not having yet shewn the Manner of putting it in Perspective. The Scheme shews the Measures are taken from *Vignola*; in which the Geometrical Upright of the Pedestal is A; the Geometrical Plan of the same is B; that of the Pilasters CC. The Plan in Perspective is D, the Elevation in Perspective is E; from which the finish'd Pedestal and Pilasters are drawn by the usual Method.

Figura Decimatertia.

Proiectio stylobatæ, ordinis
Compositi.



UUM pagina non caperet integrum stylobatam tantæ molis, fingere oportuit detractum illi esse aliquid de trunco; ac partem supremam stylobatæ sustentari ab infima, non immediate, sed per quatuor asseres; eisque impossitam fuisse adumento funium suspensorum ex trochlea. Elevatio geometrica stylobatæ est B; vestigium geometricum est A. Ex his eruitur optima delineatio vestigiū C & elevationis D. ac posita formatur stylobata nitidus E, accipiendo latitudines ex vestigio C, altitudines ex elevatione D.

The Thirteenth Figure.

The Projection of a Pedestal, of the Composite Order, in Perspective.



ANTING Room in this

Page to describe so large a Pedestal entire, we imagine it to have lost part of its Trunk, and the upper part to be set on the lower; not

immediately, but on four Cross-pieces that intervene; and for placing it thereon, we suppose the Assistance of Ropes and a Pulley. The Geometrical Elevation of the Pedestal is B; its Plan A; from whence are found their Projections in Perspective D and C. Then taking the Breadths from the Plan C, and the Height from the Elevation D, you complete the finished Pedestal E.

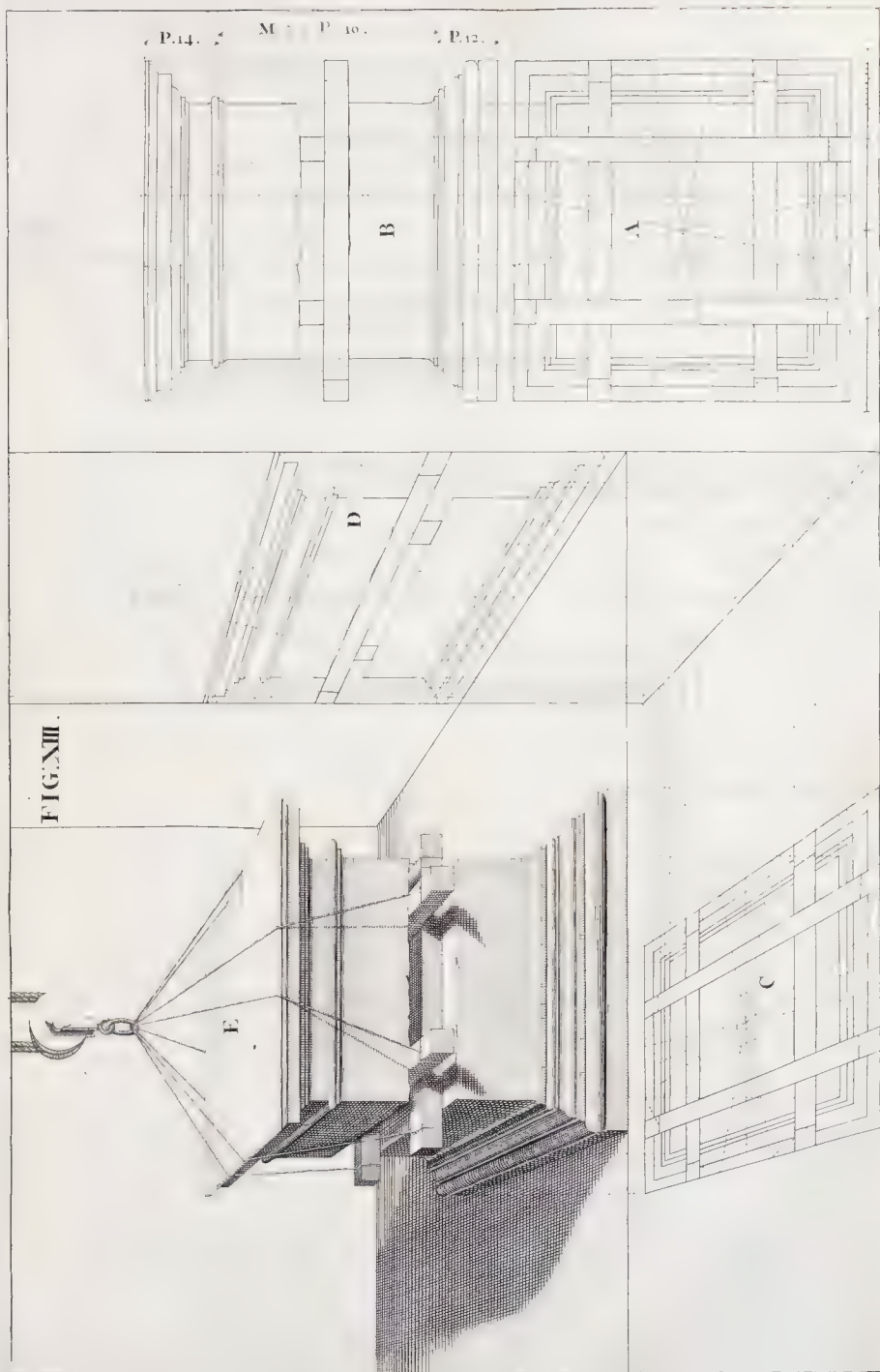


FIG. XIII.



FIG. XIV.

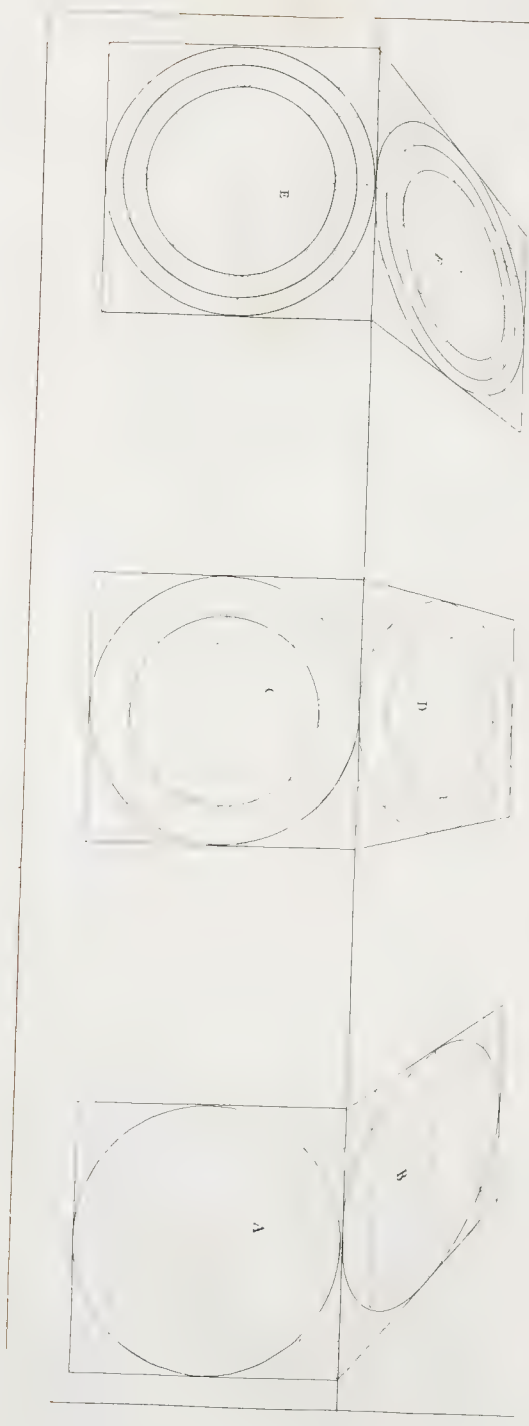
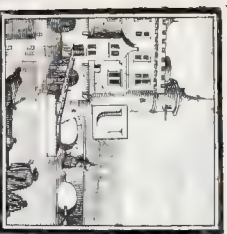


Figura Decimaquarta.

Deformatio circularum.



T^His debetis imponere licet columnas cum suis basibus & capitellis, docendus est modus qui servandus est in projectione optica circularum, tum singularium, tum duplicium aut multiplicationum circa idem centrum.

Resectionem geometricam A consistat quadrato in quatuor partes aequales diviso, cui circulus inscribitur, additis diagonalibus: & ubi he secant circulum, sunt rectae parallelae ad singula latera ipsius quadrati. Deinde quadratum cum omnibus divisionibus optice immutatur; ac tum per quatuor puncta ubi tres lineae rectae se intersectant, tum per quatuor extrema reliquarum duarum diametrorum circuli, ductis cum transversa circumferentia circuli B. Si addere velimus alium circulum, resigio geometrico C inscribitur aliud quadratum; indeque habebitur optica delineatio duplicis circuli D. Inter hos duos quomodo licet describere tertium, per octo sectiones quadratorum, ostendunt figure E & F. Uno verbo, circuli describuntur per quadrata, adhibendo sectiones visuales cum parallelis ad lineam planam, ac nullam esse punctum in quadratis & circulis A, C, E, cui per sectiones illas nequeat inveniri punctum correspondens in quadratis & circulis B, D, F. Nihilominus ubi opus habebis plures circuli, aut ubi sunt in multisque quadrata, plus confusions allatura tibi quam adjuvamenti.

The Fourteenth Figure.

Circles in Perspective.



H^AT upon Pedestals you may be able to place Columns with their Bases and Capitals, it is requisite you should know the Manner of putting Circles into Perspective; whether single, double, or many concentrick.

The Geometrical Plan A consists of a Square with a Circle inscrib'd, whose Diameters divide it into four equal Parts; and the Diagonals being drawn where they intersect the Circle, continue Lines parallel to each Side of the Square. The Square, with all its Divisions, being put in Perspective; by the four extreme Points of the Diameters, and by those of the Intersection of the Diagonals, you nearly trace by hand the Circumference B. If you would add another Circle, you must inscribe another Square, as in the Plan C; from whence you find in Perspective the double Circle D. Between these two Circles, you may, by the eight Intersections of the Squares, describe a third; as is evident by the Figures E and F. In a word, all Circles are described by the Help of Squares, tracing them by the Intersections of the visual Lines, with those parallel to the Ground-line: Nor is there any Point in either the Squares or Circles A, C, E, whose correspondent Point may not be readily found by such Sections, in the respective Squares and Circles B, D, F. Nevertheless, where your Work requires many Circles, I would advise you to use as few Squares as possible; lest they perplex, rather than assist you.

Figura Decimaquinta.

Optica delineatio Columnæ.



ESCRIPTURÆ frustum cylindricum I uniforme, fiet elevatio A, & vestigium geometricum B, saltem quodam modum. Ex hoc optice deformato, ut vides in C, ducentis sunt parallele tum latitudinis ad visualem D, tum elevationis ad visualem E; ex quibus describuntur circuli optice constructi F & L, accipiendo latitudines ex vestigio C, altitudines ex perpendiculari M; & juxta hanc methodum circuli F & L sunt sine ope quadratorum. Donum ducentis sunt perpendicularares G & H, quæ tangunt circulos F & L in punctis terminativis maxime latitudinis.

Nunc est punctum in vestigio C, cui per lineas latitudinis & elevationis nequeat inveniri locus correspondens in circulo F. Exempli gratia; locus puncti 7 est punctum 6. Hanc autem locum habebis per tres lineas, CD, DE, E 7.

In delineandis duobus frustis cylindricis, cum summo & imo scapo, eandem regulam servare oportebit.

The Fifteenth Figure.

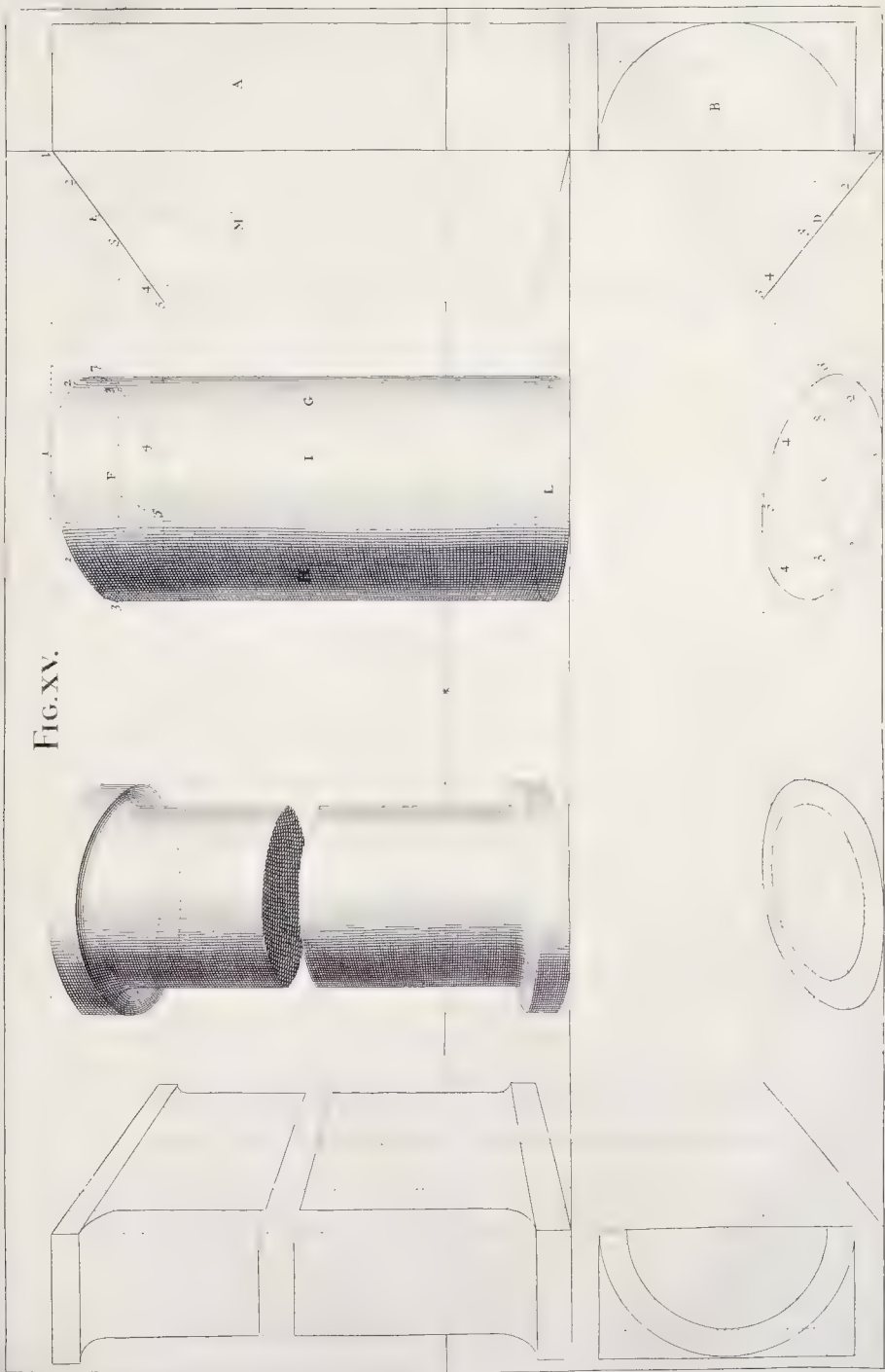
A Column in Perspective.



FIG to describe Part of the Shaft of a Pillar without Projectures, make the Elevation A, and the Geometrical Plan B, at least to the middle: From this brought into Perspective, as you perceive in C, must be drawn Parallels both of Breadth to the Visual D, and of Elevation to the Visual E: from which are described the Circles in Perspective F and L, taking the Breadths from the Plan C, and the Heights from the Perpendicular M: And according to this Method the Circles F and L are made, by the Points which terminate the greatest Breadth of the Circles I and L. There is not a Point in the Plan C, but what, by means of the Lines of Breadth and Elevation, may be found in the Circle F. For Instance; the Place of the Point 6 is 7, which is found by the three Lines CD, DE, E 7.

In designing the two Pieces of a Pillar, with the Projecture of the Pillet at Head and Foot, you must observe the very same Rule.

FIG. XV.



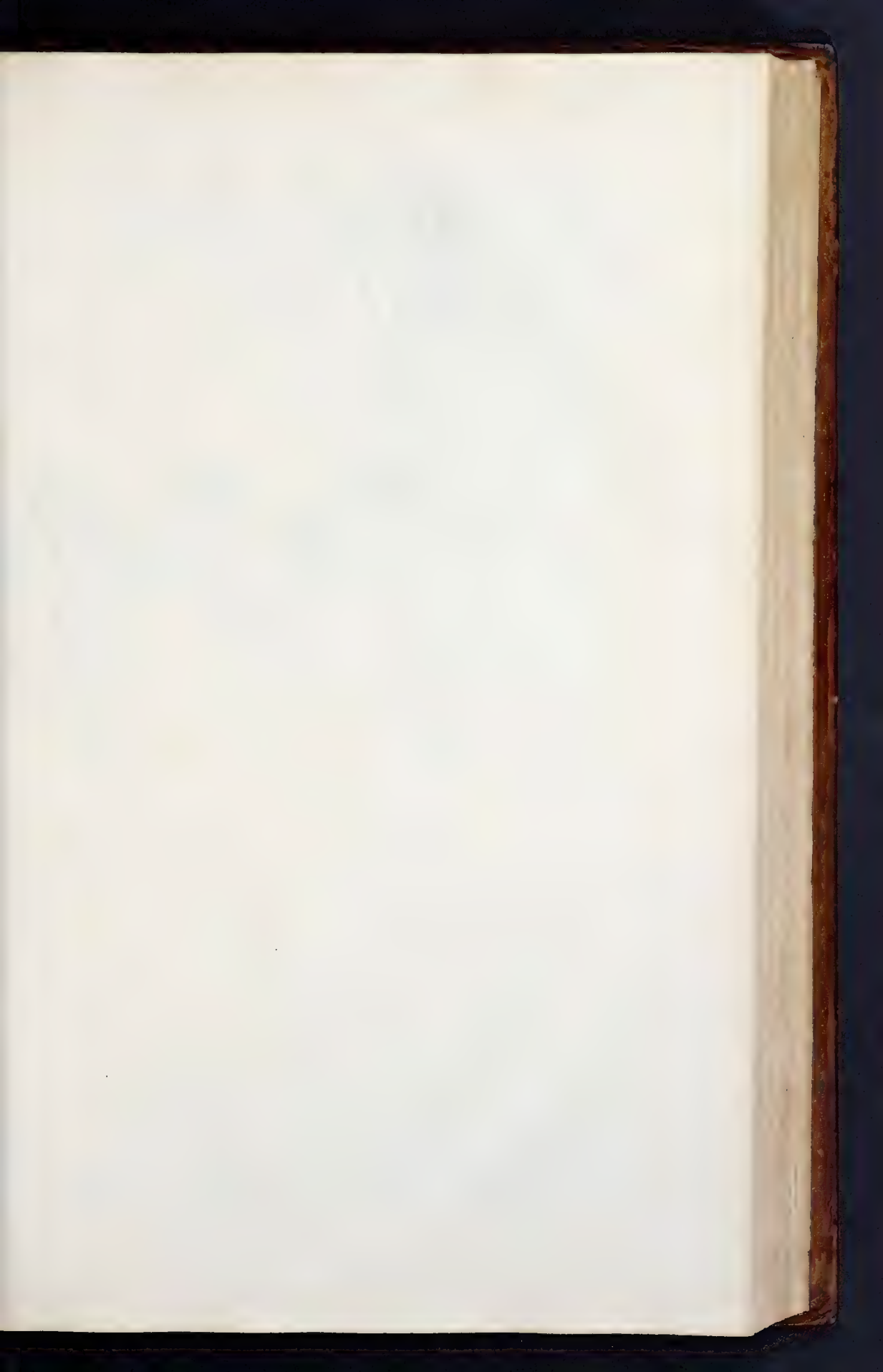


FIG. XVI.

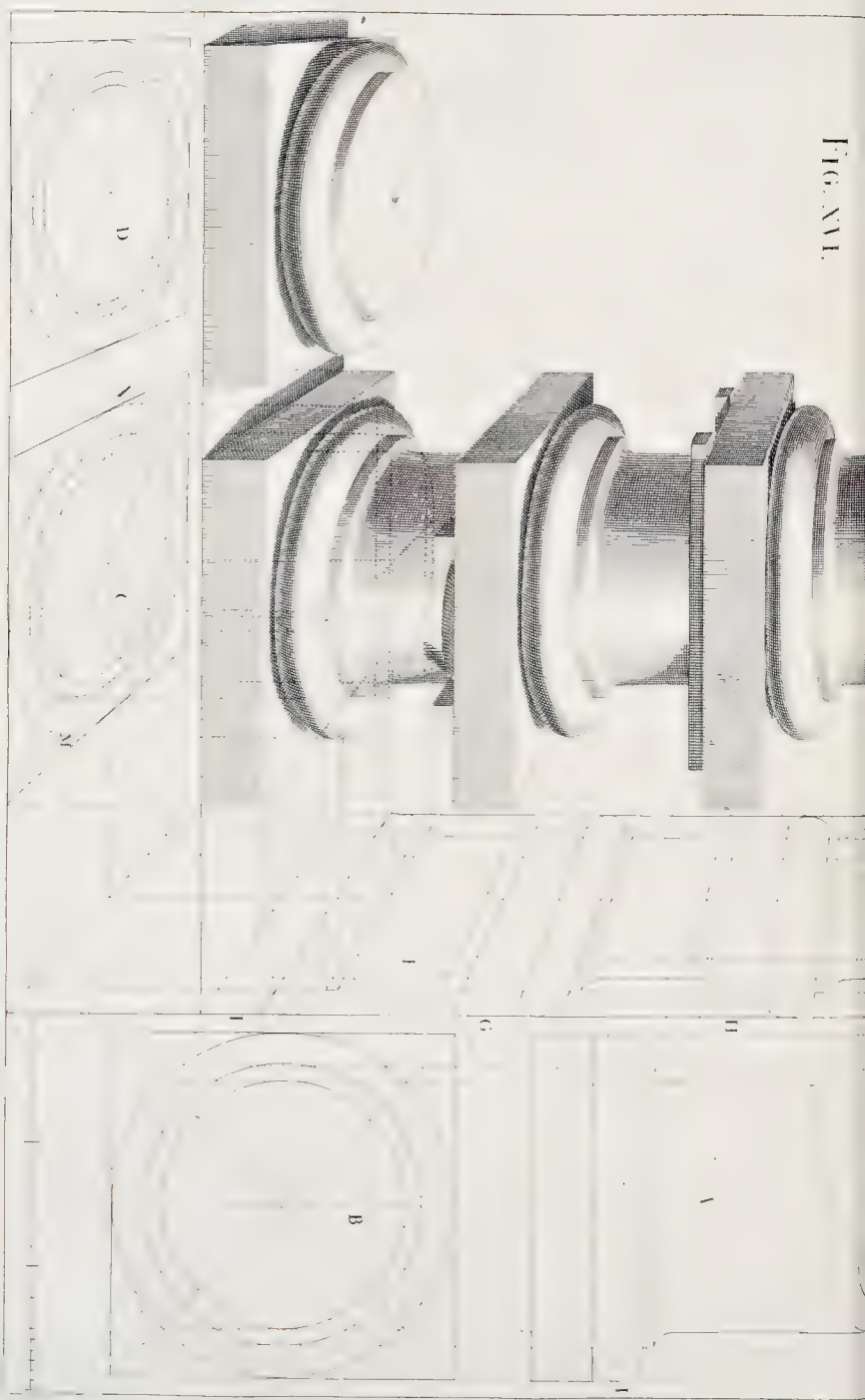


Figura Decimafexta.

Optica projectio bafis Eruſacæ.



X elevatione geometrica A emittit veſtigium B. Hoc aciem deſormato in C & D, ex circuli veſtigio C hauritur latitudines columnæ, quadræ, ac toti triplicis baſis: & eodem modo ex veſtigio D habentur latitudines quatuorveſtigio C circini perpendicularares ad partes que in ipſis reſpondent in baſi; ut æquales, quænam ſunt puncta maxima latitudinis in eisdem partibus. Hæc puncta (quæ in circulo maximo veſtigio C ſunt M & N) inveniantur tangendo circumferentiam uniſcuſque circuli regula præſtita ad lineam perpendiculararem E, nam ſi figura exiſtê delineta fuerit, regula tanget ſingulas toros trium baſium in punctis maxima hinc inde latitudinis.

Magis liberandum erit in repetendis altitudinibus quatuor baſium. Primum ſi ſcallo inſpectur deſormatio elevationis F, altitudine duram, (quæ ſaſte ſunt, notatis in linea perpendiculari E diſtinctionibus deſumptis ex elevatione geometrica A) conſtabit, nullum eſſe punctum in circuli veſtigio C, cui inquant inveniri punctum correſpondens in toto & quodâ ipſius baſis, ut oſtendant lineæ oculis, quæ incipiunt ex M & N. Eorum quilibet ex elevatione C peruenit ad lineam veſtigium, & continuatur cum linea altitudinis ex veſtigio ad elevationem F, & cum alia linea latitudinis ex elevatione F ad baſim. Porro ex figura conſtat, ſuperficiem ſuperiorem quadræ ſubſecti oculis a columnæ, & aliquid ex parte poſtea totâ quod cæteræque conſpicerentur, aſcendi a quadræ. Proinde torus, qui ex punctis maximæ latitudinis reſuſum ſectitur, conſequè delincturus eſt, quod hinc inde occurrat quadræ ſiſtam acceptum. Preſtaret autem ſingula membra ſit exiſtê delincti, quæ eſſent diſtincta; ut partes oculis imperita, omnino cohererent cum partibus quæ ipſis conſpiciantur.

Completis diſtinctionibus, ſi figuram tuam ex perpendiculari oculi ex delicta diſtincta contemplatus fueris, omnes defectus facitè deteges & ſtatim corriges. Præcipuum diligentiam ponas in formando & emendando toros, qui habet duas rotunditates; nam quatuordecim abſiſtunt; alteram quatuordecim coram angulo, ut oſtendit elevatio geometrica in l.

The Sixteenth Figure.

The Tufcan Baſe in Perſpective.



FROM the Geometrical Elevation A, is drawn the Plan B; which being put into Perſpective, as you ſee in C and D, from the Circles of the Plan C, you have the Breadths of the Column, and of the Liſt, and *Torus* of the three Baſes: And after the ſame manner, by the Plan D, you have the breadth of the Liſt and *Torus* of the laſt Baſe. From the greateſt Breadth of the Circles of the Plan C, we have erected Perpendiculars to the Parts that anſwer them in the Baſe, to the end that you may ſee where the Points fall, which terminate the greateſt Breadth of thoſe Parts. Thoſe Points (which in the biggeſt Circle of the Plan C are M and N) are found by touching the Circumference with a Line parallel to the Perpendicular E: for if the Figure were exact, that Line would touch every *Torus* of the three Baſes in the extreme Points of their Breadth.

The Heights of the four Baſes are ſomething more difficult to be found. Nevertheless, if you conſider well the Elevation F, and the other two G and H, (which are made by tranſporting the Diviſions of the Elevation A upon the Perpendicular E) it will plainly appear that there is no Point in the Circles of the Plan C, to which there may not be a correſpondent Point found in the *Torus* and Liſt of the laſt Baſe; as the occult Lines ſhew that ariſe from M and N: each of which is a Continuation of three Lines: The firſt of Breadth, from the Plan C to the Viſual; the ſecond of Height, from the Viſual to the Elevation F; the third of Breadth, from the Elevation F to the Baſe. Now, tho' it's plain by the Figure, that the Body of the Column prevents the Sight of good part of the Liſt, and the ſame Liſt takes off from part of the *Torus*, which would otherwiſe be viſible; for which Reaſon the back-part of the *Torus* is continued only till it meet the ſame: Yet it's certainly beſt to draw every Member cometh, as tho' the Work were tranſparent; that the Parts hidden from the Eye may the better agree with thoſe that are expoſed to it.

When your Draught is finiſhed, if you view it in the due Diſtance, and perpendicularly to the Point of Sight; you'll readily diſcover and rectify what's amiſs. Your chief Care will be employ'd in ſhaping the *Torus*, difficult by reaſon of its Roundneſs both ways: namely, in the Contour of its Moulding, as in the Elevation I; and in the Circuit it makes about the Column.

Figura Decimaseptima.

Deformatio basis Doricæ.



*D vitandam satietatem quam
pareret nimia uniformitas, vi-
nam ex basibus invertimus.
Utraque autem basis deline-
ata est metodo quam tradi-
dimus figurâ præcedenti. E-
ademque methodus adèò manifestè patet ex li-
neis occultis latitudinum & elevationum, ut
superfluum futurum sit ipsam repetere.*

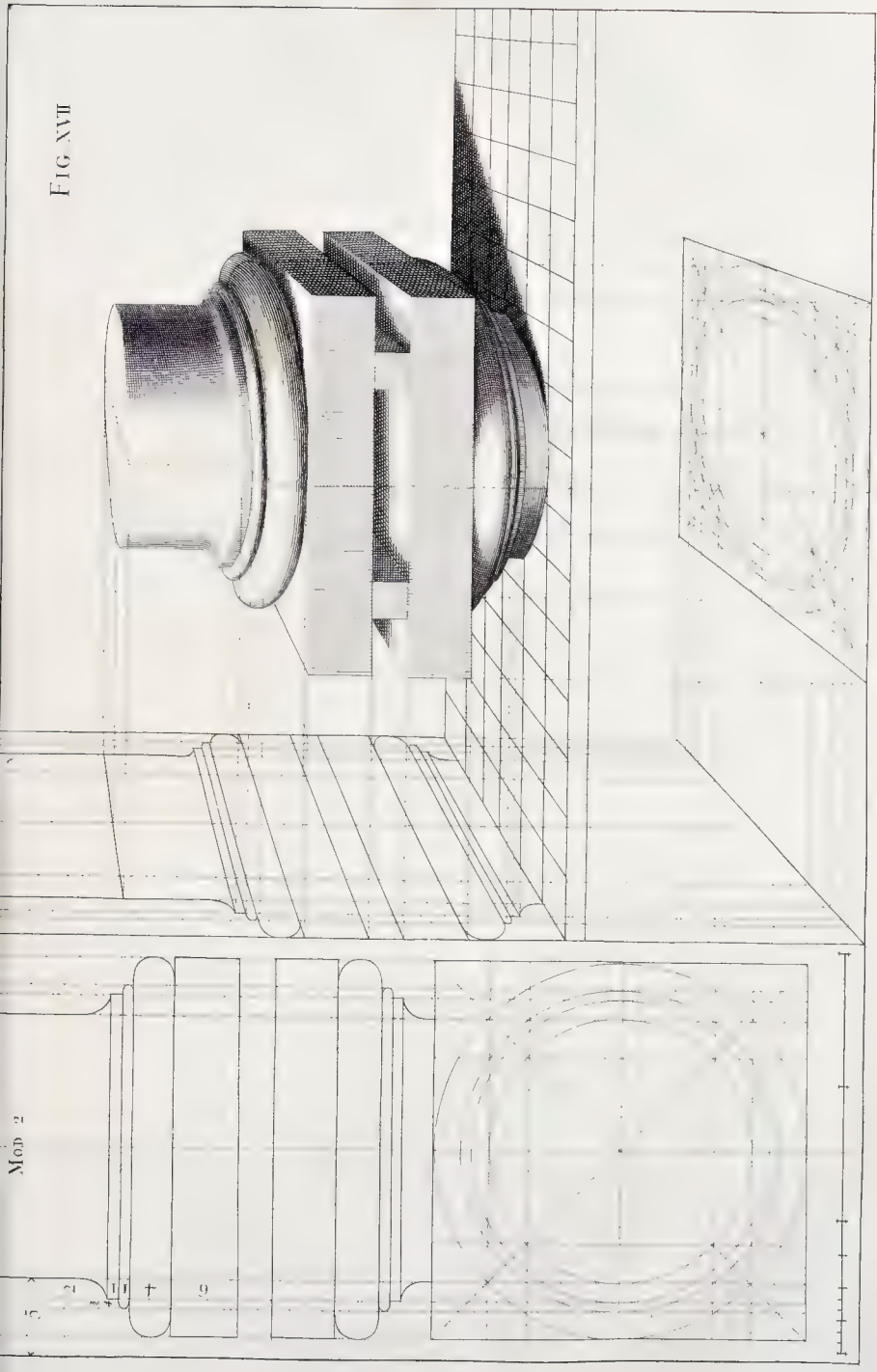
The Seventeenth Figure.

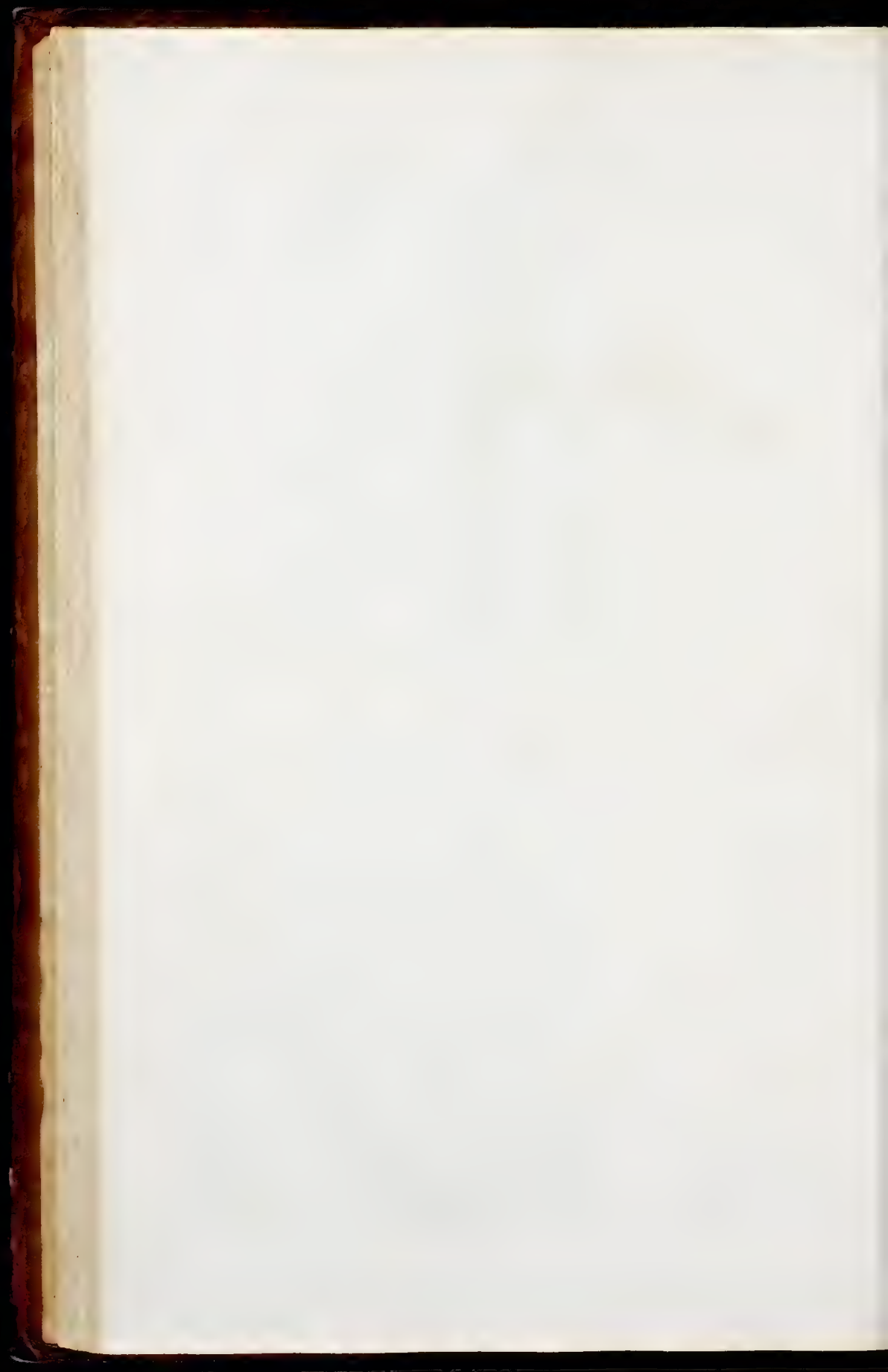
The Dorick Base in Perspective.



HAT you may not be tir'd
with practising one and the
same thing, I have here, for
Variety-sake, inverted one
of the Bases. Both of 'em
are drawn after the Man-
ner explain'd in the foregoing Figure;
which is so evident from the occult Lines
of the Plan and Elevation here given, that
I think it superfluous to say any more of it.

FIG. XVII





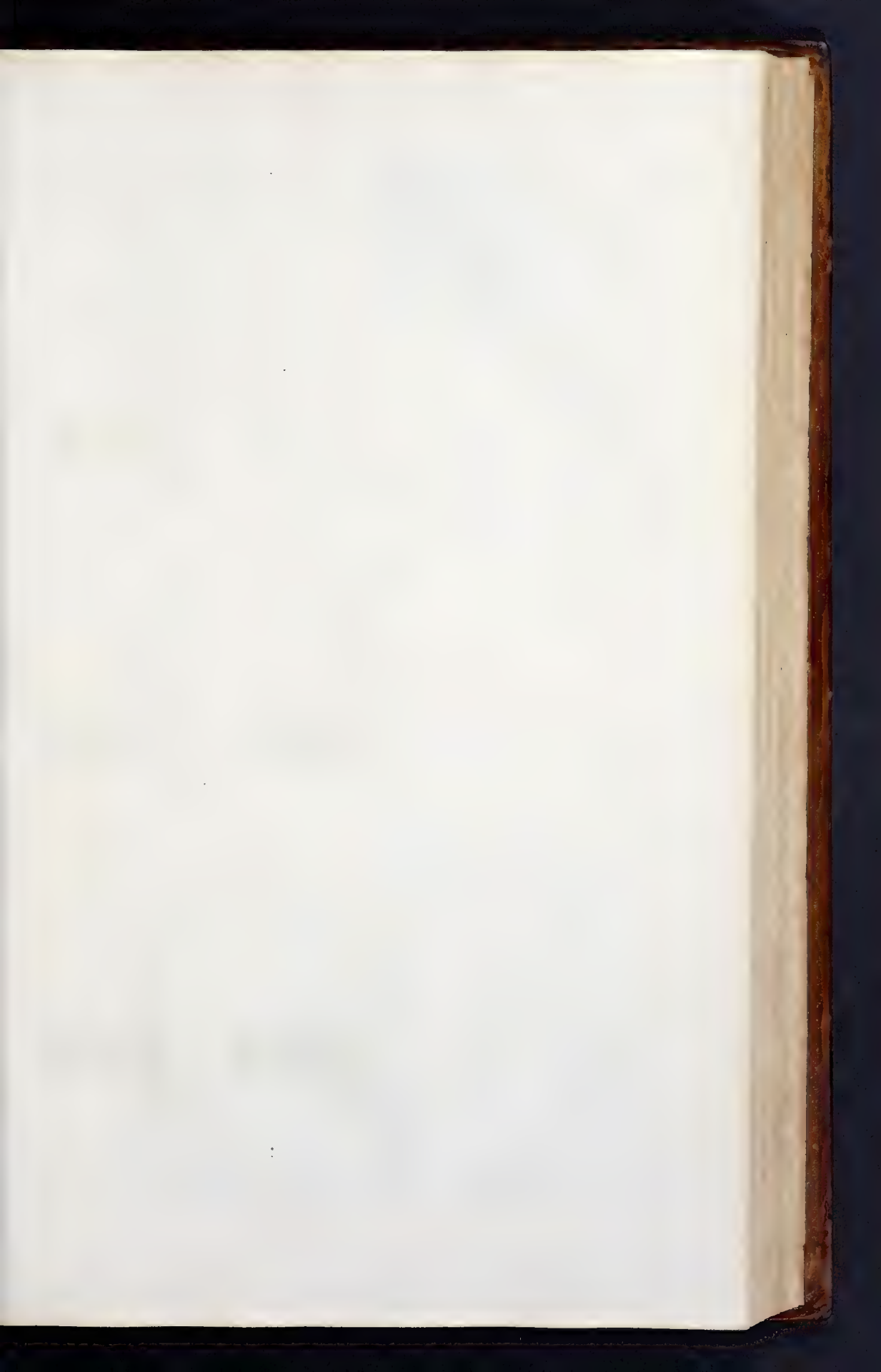


FIG. XVII.



Figura Decimaocłava.

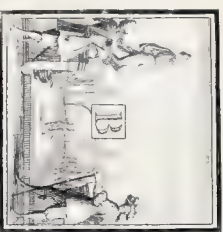
Optica delineatio basıs Ionicæ.



X multitudine ac varietate figurarum hujus Operis, discēs, mi Lector, modum deformanti res demissas & sublines, magnas & parvas. In hac figura, linea cui bases duarum columnarum incumbunt, est conjunctum linea plani, & linea horizontalis; linea cui bases trium columnarum incumbunt, est altior linea horizontali. Quendamnam autem, si linea plani sit inferior linea horizontali, linee quæ tendunt ad punctum oculi & ad punctum distantie, ascendant sursum; ita si linea plani sit superior horizontali, linee quæ veniunt ad punctum oculi & ad punctum distantie, tendunt deorsum. Quod si in eadem tabula sint plura plana, eorumque aliqua sint altiora, alia verò demissiora linea horizontali, linee omnes planorum, ac linea horizontalis, sunt invicem parallele; adeoque ex linea, quæ omnes eas normaliter secet, statim dignosci potest, in qua proportionem, singula plana sint altiora vel profundiora linea horizontali. Velin quoque obferres, latitudinem columnæ medię, minorem esse latitudinem columnarum lateraliũ; & discrimen inter hujusmodi latitudines eò esse majus, quò punctum distantie fuerit vicinius puncto oculi. Quæ dicta sunt de columnis, intelligere oportet de basibus, & de optica delineatione amborum. Nihilominus, si figura ex debito puncto inspicitur, columnæ pictæ habebunt eandem apperentiam, quam habent columnæ solide, invicem æquales.

The Eighteenth Figure.

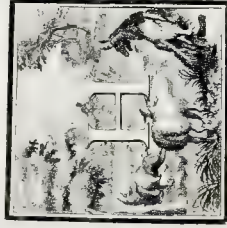
The Ionic Base in Perspective.



Y the Multitude and Variety of Figures in this Work, the Reader will be instructed in delineating things, however different in Size or Situation. In this Figure, the Line on which the two Columns rest, is both the Horizontal and the Ground-line; that on which the three Columns are plac'd, is so much higher than the Horizontal Line. And as, where the Ground-line is beneath the Horizontal, the Lines drawn to the Points of Sight and Distance tend upwards; so, where the same is above the Horizontal, the Lines to the Points of Sight and Distance tend downwards. If in the same Picture there are different Grounds, some higher, others lower than the Horizontal Line; yet are all those Ground-lines, and the Horizontal, parallel one to another; and therefore, by a Line cutting them all perpendicularly, you presently know in what proportion each Plan or Ground is higher or lower than the Horizontal. I would have you observe, That the Breadth of the middle Column is, by the Perspective, render'd less than that of the Side-Columns; and that this Difference is the greater, as the Point of Distance approaches nearer to the Point of Sight. What has been said of the Columns, is also to be understood of the Bases, and the Projections of all their Parts in Perspective: Nevertheless, if the Picture be view'd from its due Place, the Columns will have the same Effect, as if solid; and all appear equal one to the other.

Figura Decimanona.

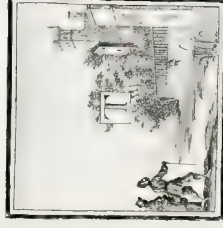
Optica imminutio basis Corinthia.



ÆC basis juxta regulas tradita optice contracta est. Porro altitudo superficiæ A est eadem cum altitudine lineæ visualis CD; latitudo crucis A est eadem cum latitudine crucis secundi circuli vestigiæ B, incipiendo à minimo omnium. Due lineæ normaliter infixæ basi, ostendunt maximam latitudinem quam habere debet columna supra imum scapum. Maxima latitudo tori superioris & utriusque astragali, est eadem cum maxima latitudine tertii circuli. Maxima latitudo tori inferioris est eadem cum maxima latitudine ultimi circuli.

The Nineteenth Figure.

The Corinthian Base in Perspective.



HIS Base is put in Perspective by the Rules before laid down. The Height of the Superficies A is the same with that of the visual Line CD; the Breadth of the Cross A is the same with that of the second Circle of the Plan B, beginning with the least. The two Lines that stand perpendicularly on the Surface of the Base, shew the greatest Breadth of the Columns Shaft above the Fillet. The Extent of the upper *Torus* and the two *Astragals*, is the same with that of the third Circle; and the Extent of the lower *Torus* is the same with that of the outward Circle.

FIG. XX.

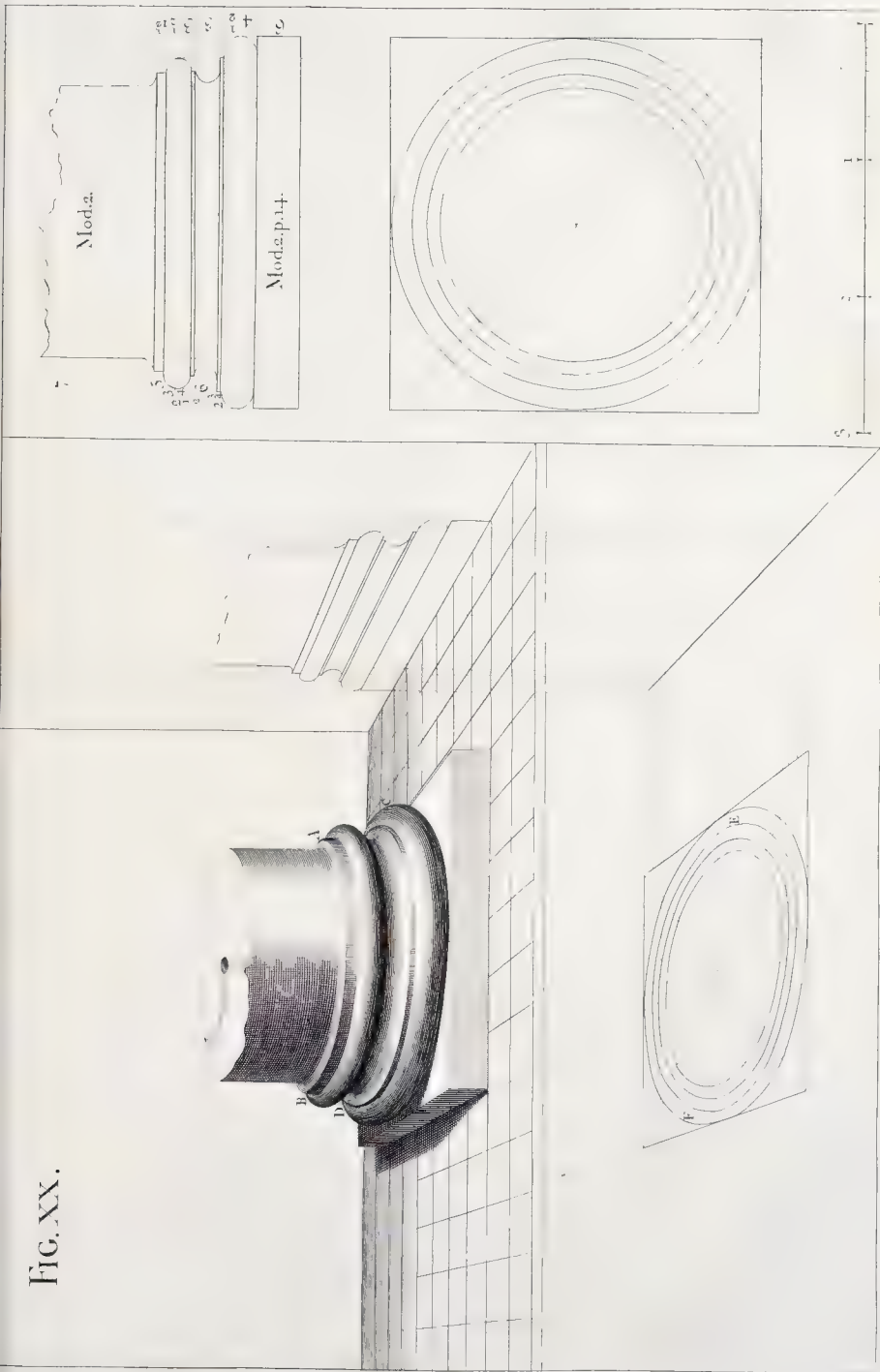




FIG. XIX.

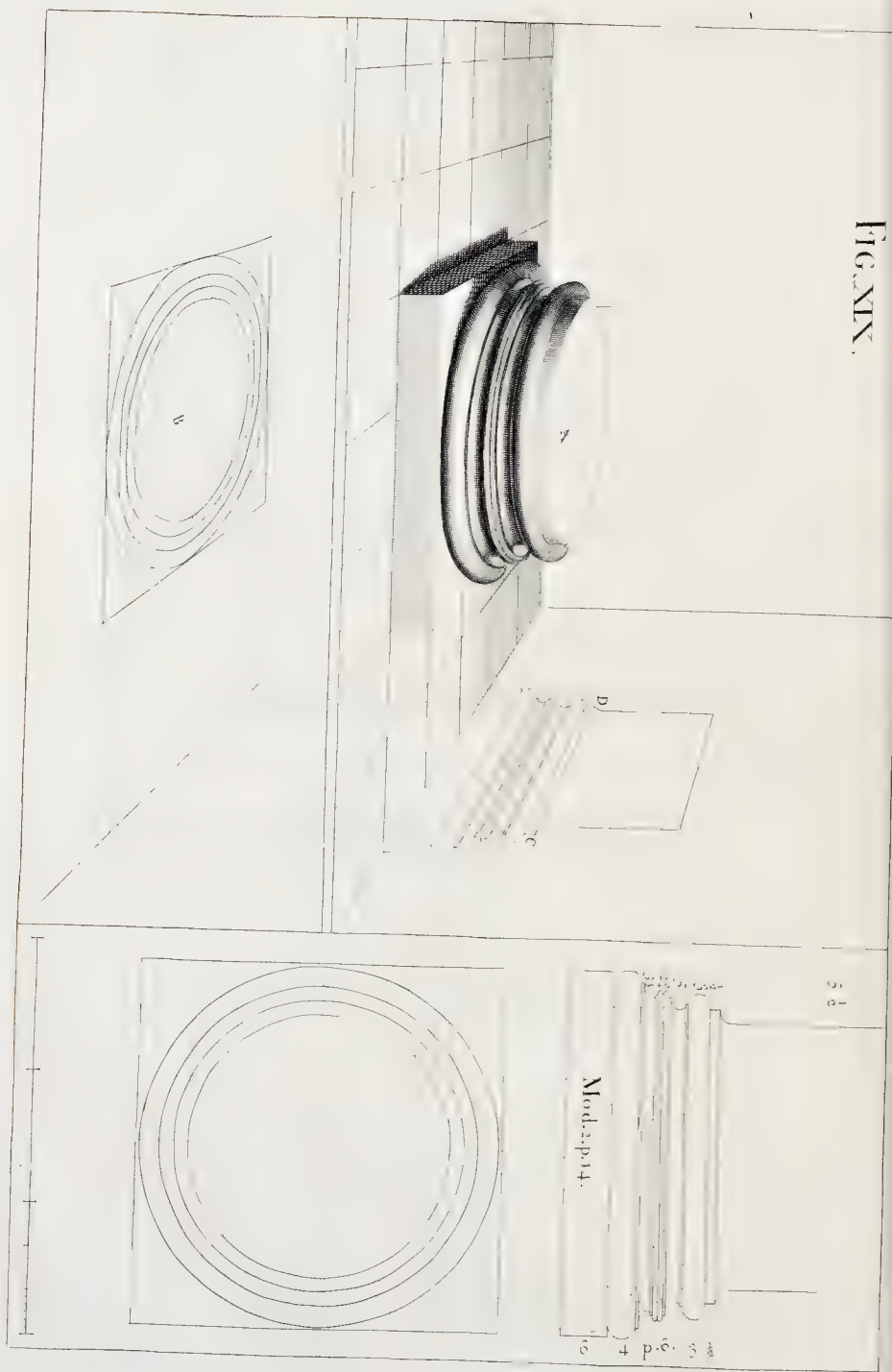


FIGURA Vigesima.

Basīs Aëticurga optice imminuta.



ASIS Aëticurga Pictoribus præ reliquis familiaris est, quia cum omnibus serè Ordinibus egregie consentit. Porro ex punctis E & F maxime utrinque latitudinis extimè circuli vestigiū, habetur maxima latitudo tori inferioris CD. Ac cætera quæ spectant ad ipsam & ad torum AB, petenda sunt ex dictis de basi Etrusca.

The Twentieth Figure.

The Attick Base in Perspective.



THE Attick Base is more frequently made use of by Painters, than any other; because it suits well with most of the Orders. The Points E and F, the greatest Breadth of the outward Circle of the Perspective-Plan, give the greatest Breadth of the lower Torus CD. And whatever else relates either to this or the upper Torus AB, is to be sought in the same Manner, as has been shewn in the Tuscan Base.

Figura Vigesima prima.

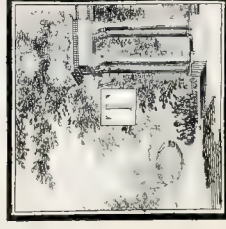
Optica imminutio capitelli Etrusci.



ADEM cuius reliquis formâ, eâdemque methodo capitella delineanda sunt: quum babeant ipsa quoque suum circummatium quadratum, & sint rotunda. Linea plani solet in iis fieri altior lineâ horizontali: quia quum capitella imponenda sint columnis homine altioribus, plerumque apparent sublimiora nostris oculis.

The Twenty-first Figure.

The Tuscan Capital in Perspective.



THE Manner before delivered concerning Bases, is of the same Use in delineating Capitals; forasmuch as these also have their square *Abacus*, and their round Members. The Ground-line in Capitals is usually plac'd above the Horizon; because when they are set upon Columns which exceed a Man's Height, they are generally represented above the Eye.

FIG: XXI.

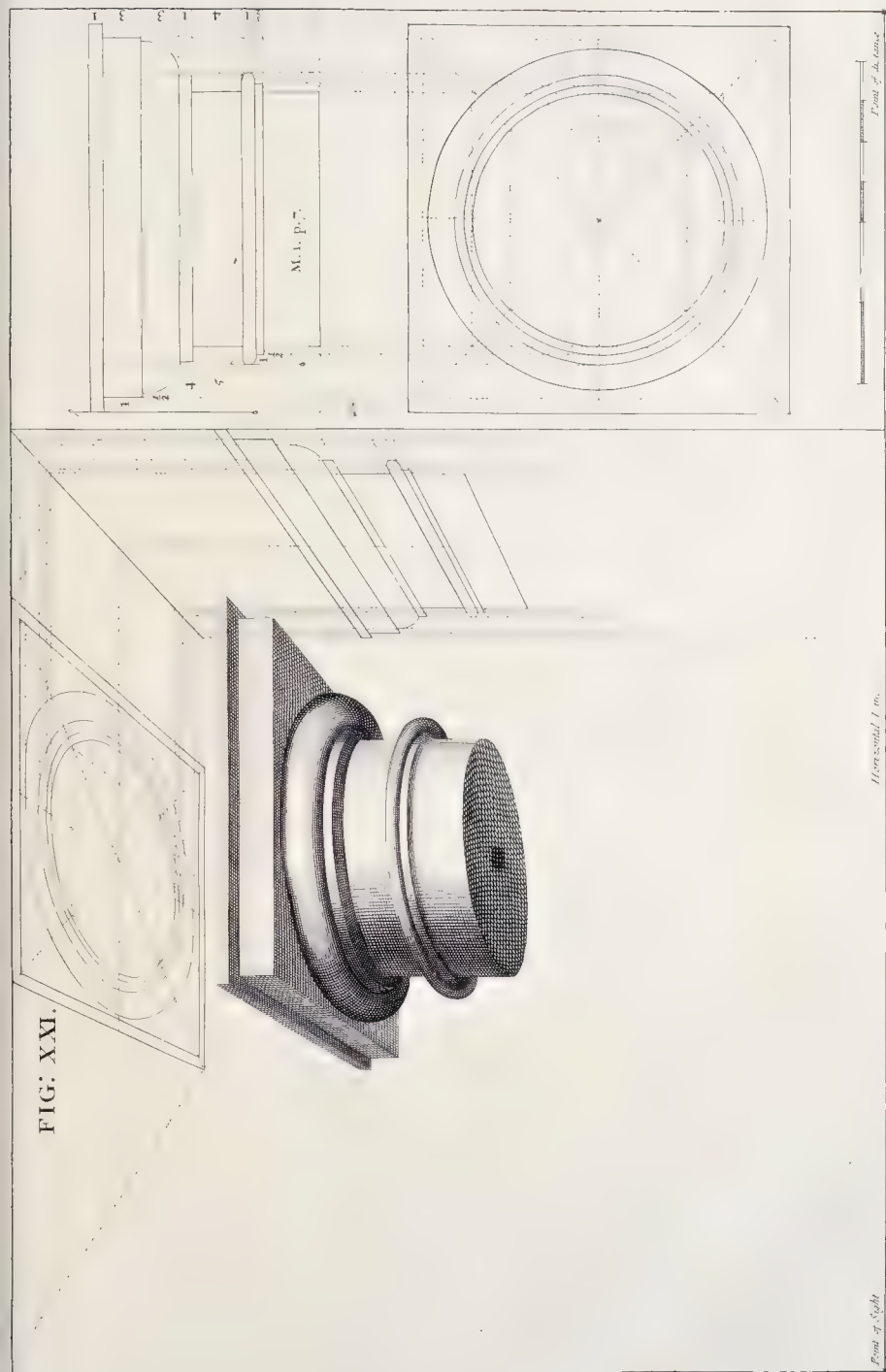




FIG. VII.

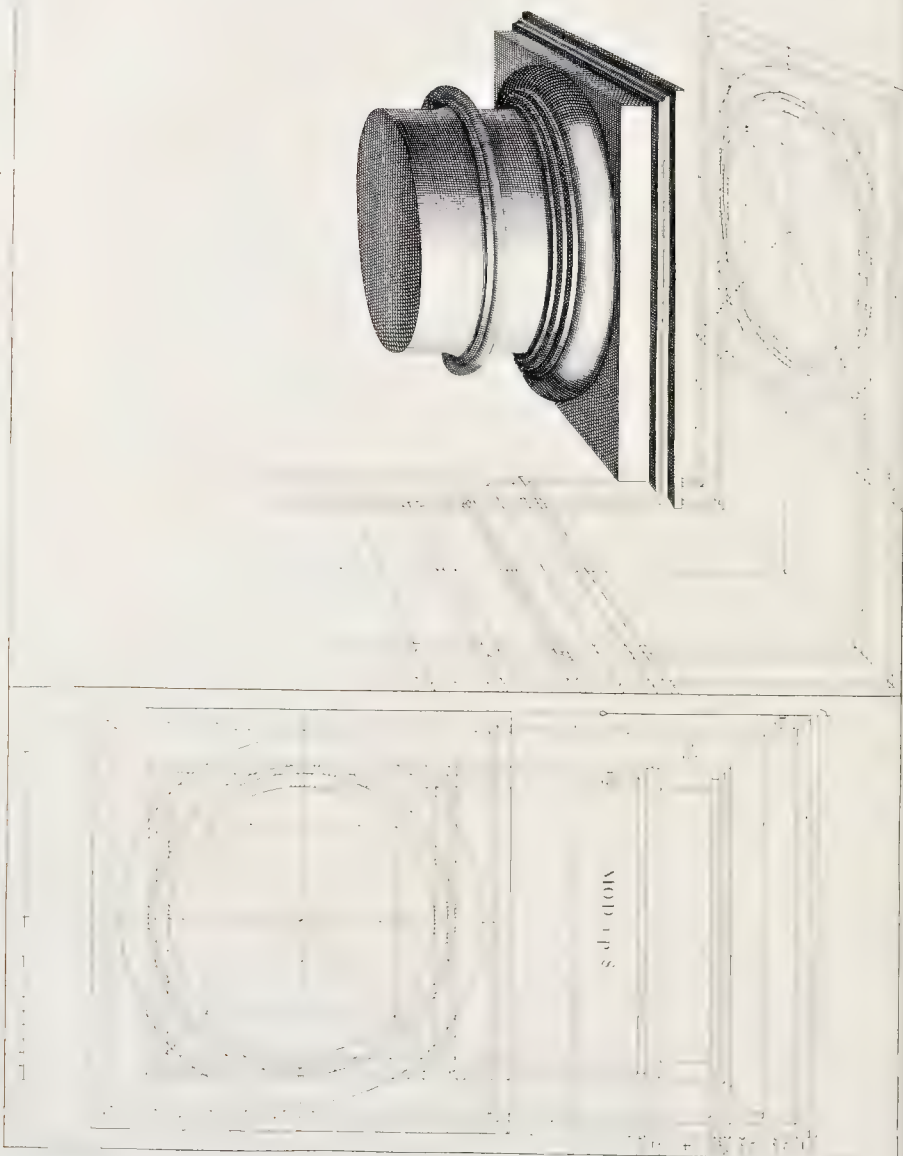
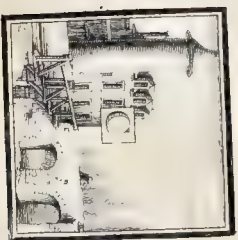


Figura Vigesima secunda.

Optica projectio capitelli
Dorici.



APITELLUM hoc pluribus
membris constat, adeoque o-
perosius est quam præcedens.
Nihilominus accurata deline-
atio vestigii geometrici omnes
difficultates complanabit.

Twenty-second Figure.

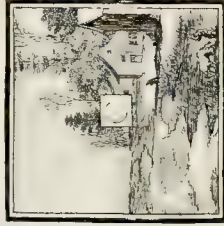
*The Projection of a Dorick Capital,
in Perspective.*



HIS Capital consisting of
more Members than the
foregoing, will be more
troublesom to put in Per-
spective; but an accurate
Delineation of the Geo-
metrical Plan will certainly remove many
seeming Difficulties.

Figura Vigefimatertia.

Deformatio capitelli Ionici.



APITELLUM Ionicum posuit duas elevationes geometricas distinctas, alteram latus, ex utroque constructum vestigium geometricum A, quod optice contrahitur, translatus in B punctis latitudinis C, & in E punctis longitudinis D more consueto: ut ex punctis B latitudinis, linee tendant ad punctum oculi; ex punctis vero E longitudinis, linee tendant ad punctum distantie.

Ex vestigio capitelli optice contrahenda est elevatio longitudinis ut in figura. Ex utroque vero juxta morem fiat capitellum nitidum, acceptis latitudinibus ex vestigio, altitudinibus ex elevatione longitudinis. Hæc quoque dabit maximum latitudinem singularium volutarum.

Modum delineandi capitellum Ionicum, in quo helices volutarum obliquantur, dabimus infra figura trigesima.

Twenty-third Figure.

The Ionick Capital in Perspective.

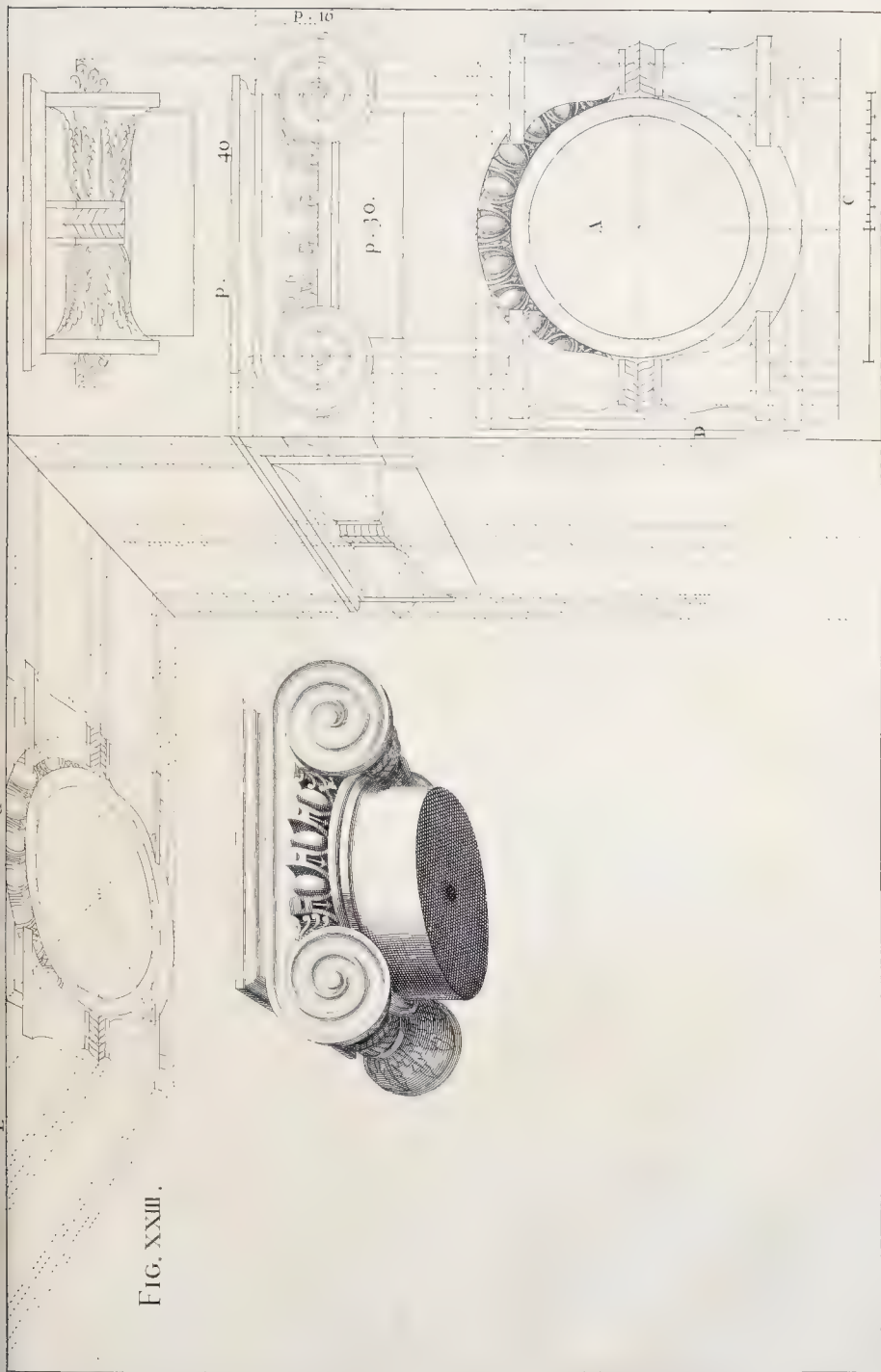


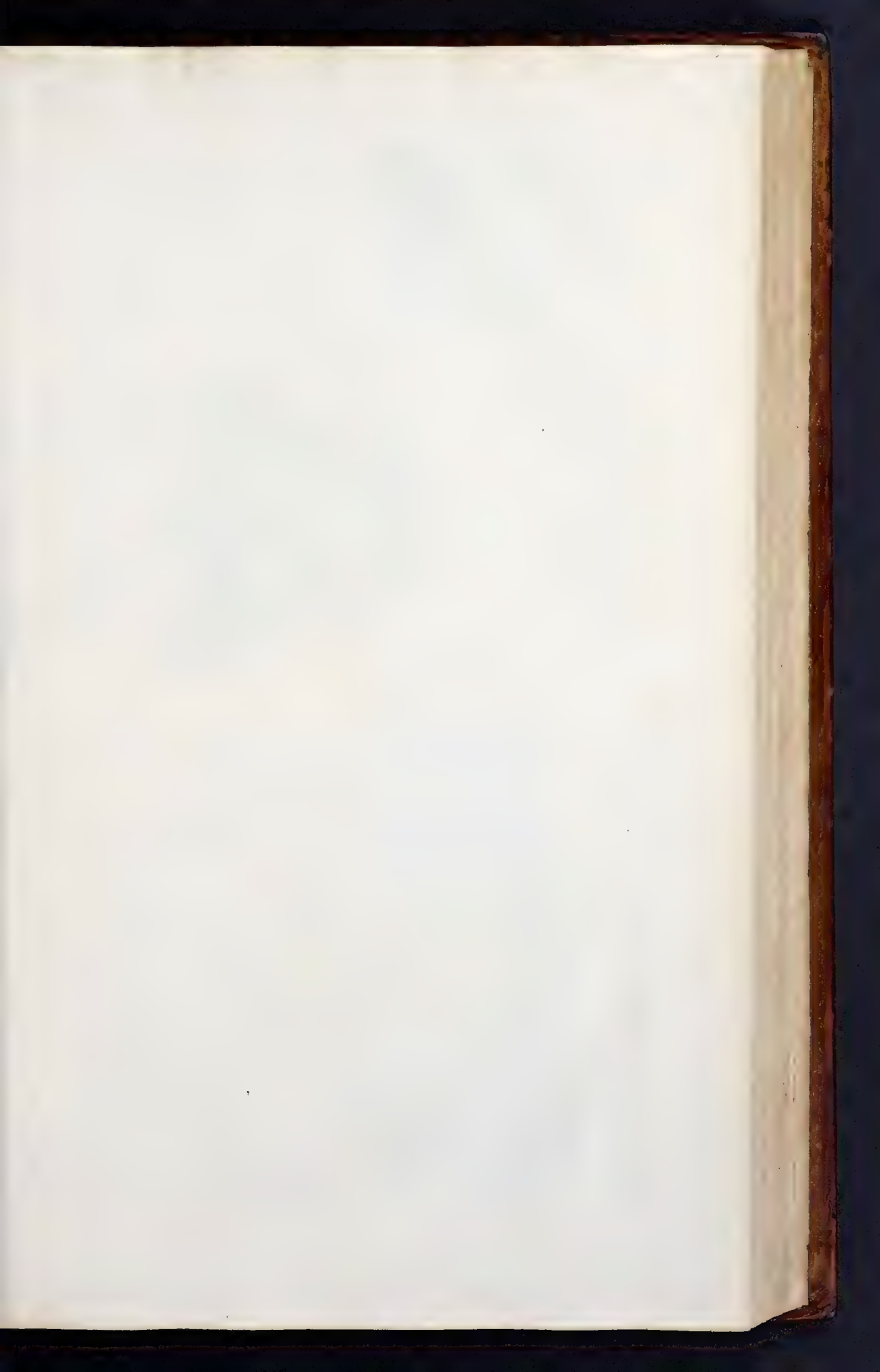
THE Ionick Capital requires two distinct geometrical Elevations, one of the Front, the other of the Side; from both which is found the geometrical Plan A, which is put in Perspective by transferring into B the Points of Breadth C, and into E the Points of Length D, after the usual Manner; that from the Points of Breadth B, Lines may be drawn towards the Point of Sight; and from the Points of Length E, towards the Point of Distance.

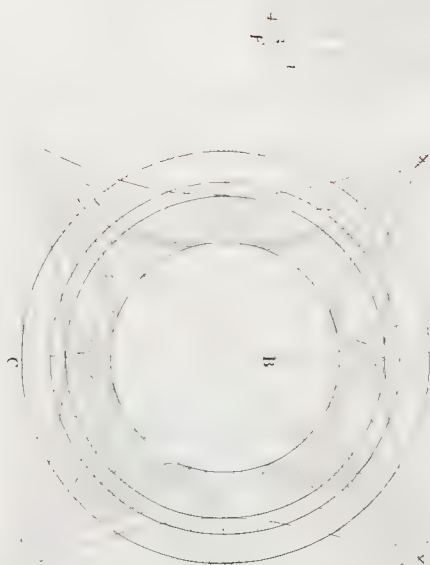
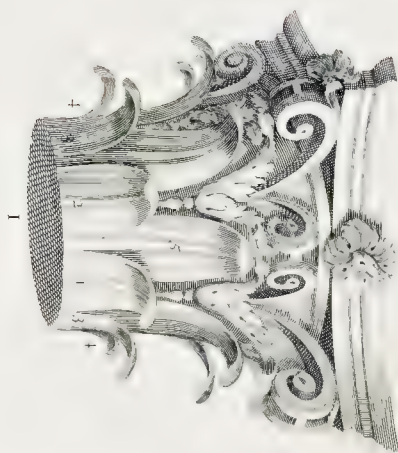
From the Plan of the Capital in Perspective, is to be drawn the Upright of the Length, as in the Figure; and from both, as usual, the finished Capital is wrought, by taking the Breadths from the Plan, and the Heights from the Elevation; this giving the utmost Height, and that the utmost Breadth of each of the Volutes.

The Manner of describing the Ionick Capital, whose Volutes lie obliquely, we shall hereafter treat of in the Thirtieth Figure.

FIG. XXIII.







M. P. 17

Figura Vigesimaquarta.

Optica projectio capitelli Corinthii.



APTELUM Continuit abobere non poteris, nisi elevatione geometrica eique vestigio exactissime delineatis juxta regulas Barozzii.

Ad formandum ex vestigio B vestigium E, rellis oculis sunt quatuor necessaria ad contrationem opticam quatuor vel trium saltem circumum ; transactis in lineam D divisionibus linee C, et abobere cetera quae posita sunt in vestigio E.

Ut fiat optice elevatio longitudinis E, in lineam perpendiculararem H transferatur ex elevatione A omnes ejus divisiones. Complebitur autem per lineas rectas, quae ex punctis divisionum ducantur ad punctum oculi, ac per rectas ex circumum summam ac profunditatem, quae rectae sunt parallelae ad lineam D, ac perveniant ad visum G ; indeque descendunt, ac sunt parallelae ad lineam perpendiculararem H.

Capitellum nitidum exortis ab infimo circulo I, ostendente ambitum columnae. Succedunt folia 1, 2, quorum latitudines accipiuntur ex vestigio E per circumum, posita una cuspidi in linea H ; altitudines vero accipiuntur ex elevatione F, posita una cuspidi circum in linea D. Idipsum dico tum de foliis 3, 3, 4, 4, tum de folio 5, ac de aliis, et demum de cymato. Descendunt vero lineae curvae ipsius cymati incipiet ex acie L.

Twenty-fourth Figure.

The Corinthian Capital in Perspective.



HERE is no Completing the Corinthian Capital, unless you most accurately describe its Geometrical Elevation and Plan, according to the Rules of *Vignola*.

Being to form the Plan E from the Plan B, you must, with occult Lines, make the Squares necessary for bringing four, or at least three of the Circles into Perspective ; transferring into the Line D the Divisions of the Line C, and the rest as usual. Then, with other occult Lines, contract the Plans of the Leaves, and finish what's farther requisite in the Plan E.

To make the Optick Elevation of the Length F, you must transfer into the Perpendicular H all the Divisions of the Elevation A ; and complete the same, by Lines drawn toward the Point of Sight, till they meet their respective Perpendiculars ; which proceeding from all parts of the Circles parallel to the Line D, intersect the Visual G ; from whence they descend, Parallels to the Perpendicular H.

In working the clean Capital, you should begin with the lowest Circle I, which denotes the Comps of the Column. Then make the Leaves 1, 2, by taking their Breadths from the Plan E, with the Compas, and keeping one Point of them upon the Line H ; and their Heights from the Elevation F, keeping one Point on the Line D. The same must be done, as well by the Leaves 3, 3, 4, 4, as by the Leaf 5, and the others ; and last of all, by the *abacus* also ; the Sinking of the Horns whereof answers that of the visual Line L.

Figura Vigesimaquinta.

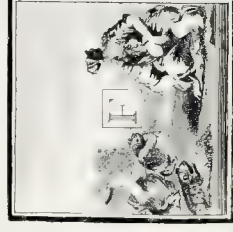
Optica descriptio capitelli Compositi.



X iis quæ diximus de capitulo Corinthio, didiceris modum faciendi capitellum Compositum. Velim autem tibi persuadeas, cum lectione harum regularum quæ sunt magistri inanimæ, circini usum perpetuò conjungi oportere. Hic enim viri magistri defectum unice supplere potest.

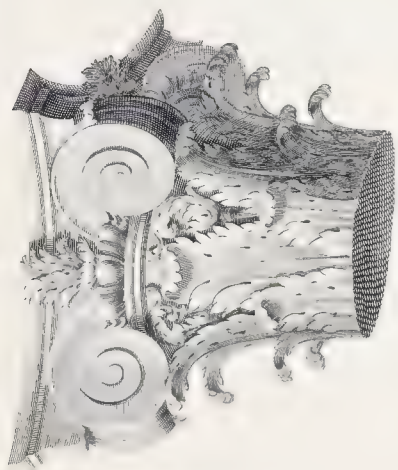
The Twenty-fifth Figure.

The Composite Capital in Perspective.

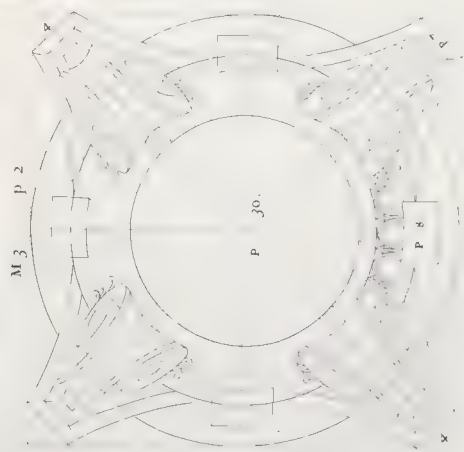


ROM what has been said of the *Corinthian Capital*, may be learnt the Manner of putting the *Composite* also into Perspective. I wish I could prevail with you, that to the Reading of the Rules, which in themselves are but lifeless Masters, you would constantly add a diligent Practice of the Figures by the Compasses; this being the only way to supply the Want of a living Master.

FIG. XXV.



9 3 6 3 4 2 4 3



M 3 p 2

P 30.

P 8



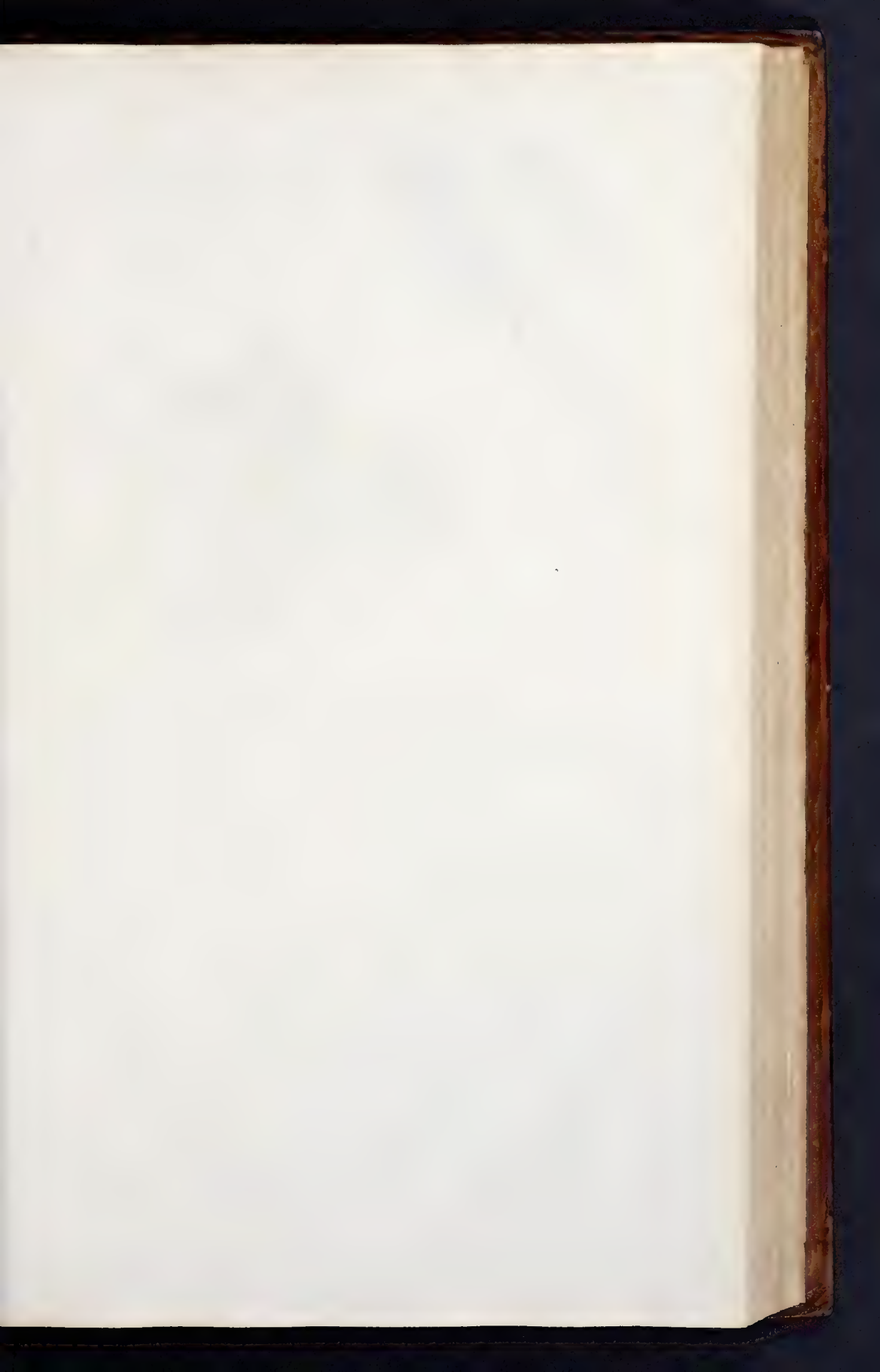


FIG. XVI.

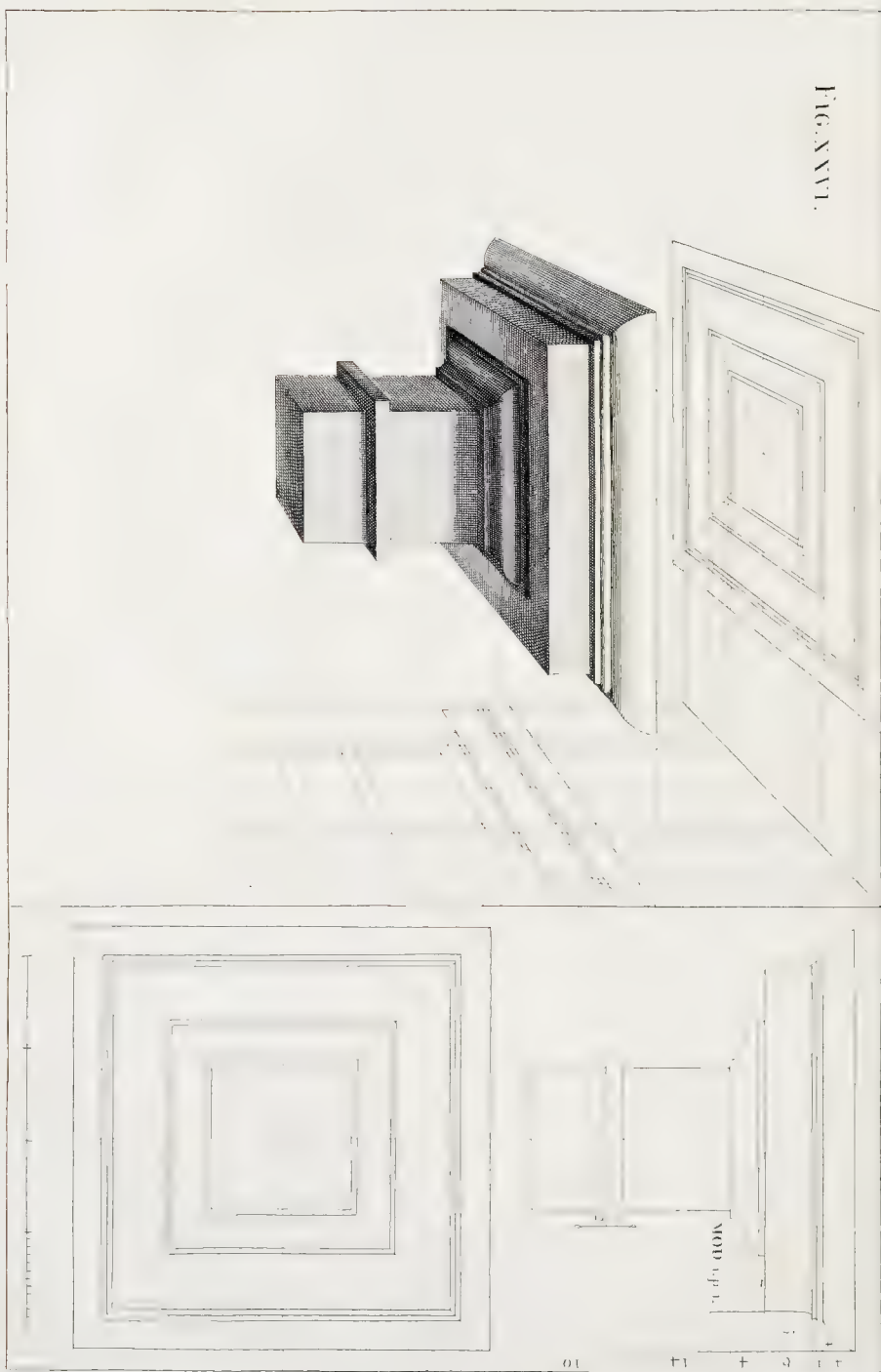


Figura Vigesima sexta.

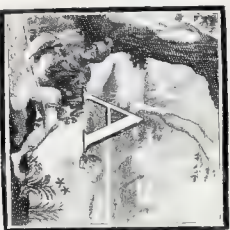
Deformatio coronicis Etruscæ.



OST capitebella sequuntur coronices, quæ utpote quadratæ, minimam habent arduitatem. Inter coronices vero, nulla est Etruscâ simplicior ac facilior. Ex elevatione geometricâ, more solito, formatur vestigium geometricum; ex eoque optice contracto eruitur similis elevatio longitudinis. Denum ex elevatione & vestigio compositur coronix nitida. Memineris autem duas esse lineas, quæ hinc inde terminant latitudinem elevationis optice. Linea quæ altior est, dat altitudinem anterioris faciei coronicis, alia quæ est depressior, dat altitudinem faciei posterioris. Et ita erit in posterum.

Twenty-sixth Figure.

The Tuscan Entablature in Perspective.



Order is the most simple and easie to be put in execution. From the Geometrical Upright is drawn, as usual, the Geometrical Plan; from the Plan put in Perspective is described the Optick Elevation of the Length; and from both the latter is wrought the clean Entablature requir'd. You may observe, here are two Lines that terminate the Breadth of the Perspective on one side and the other. The Line which proceeds from the higher Corner of the Visual, gives the Height of the most advanced Part; that from the lower determines the Height of the Back-part. And so for the future.

Figura Vigesima septima.

Optica delineatio coronicis Doricæ.



N faciendâ coronicæ Doricâ,
 quæ majorem operam poscit,
 ob denticulos & triglyphos;
 communis regula servanda est.
 Si autem libeat coronicem ni-
 tidam describere in papyro
 separatâ ab ejus præparationibus, id profectò
 licet, tum in hoc, tum in quocunque alio
 schemate.

Twenty-seventh Figure.

The Dorick Entablature in Perspective.



N making the *Dorick* En-
 tablature, which has some-
 thing more Work in it
 than the former, on ac-
 count of its Dentels and
 Triglyphs; the common
 Rule is to be observ'd. And if you would
 delineate the finish'd Entablature in a Pa-
 per distinct from that of its Preparations,
 you are at liberty so to do, either in this
 or any other Figure.

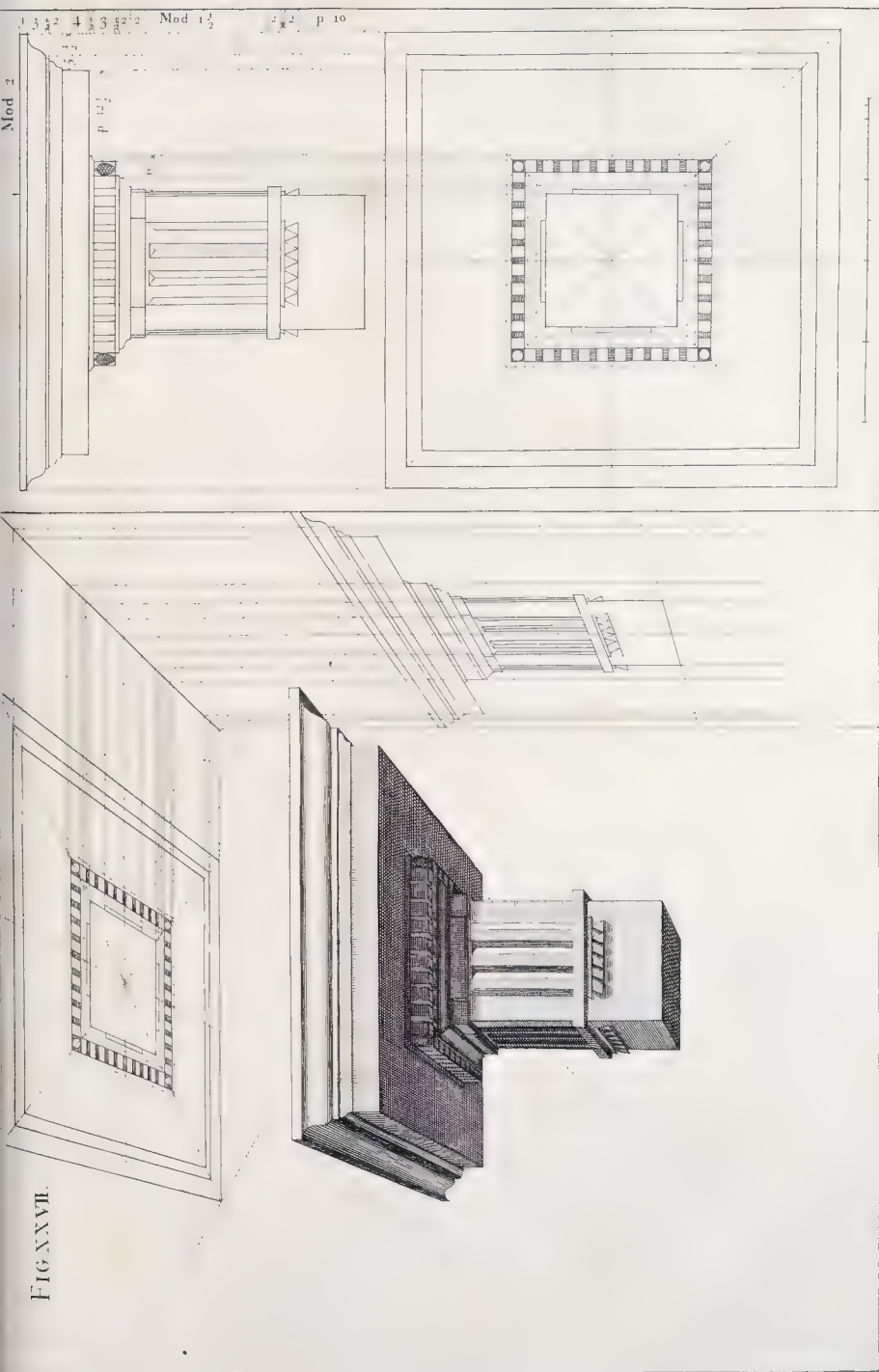
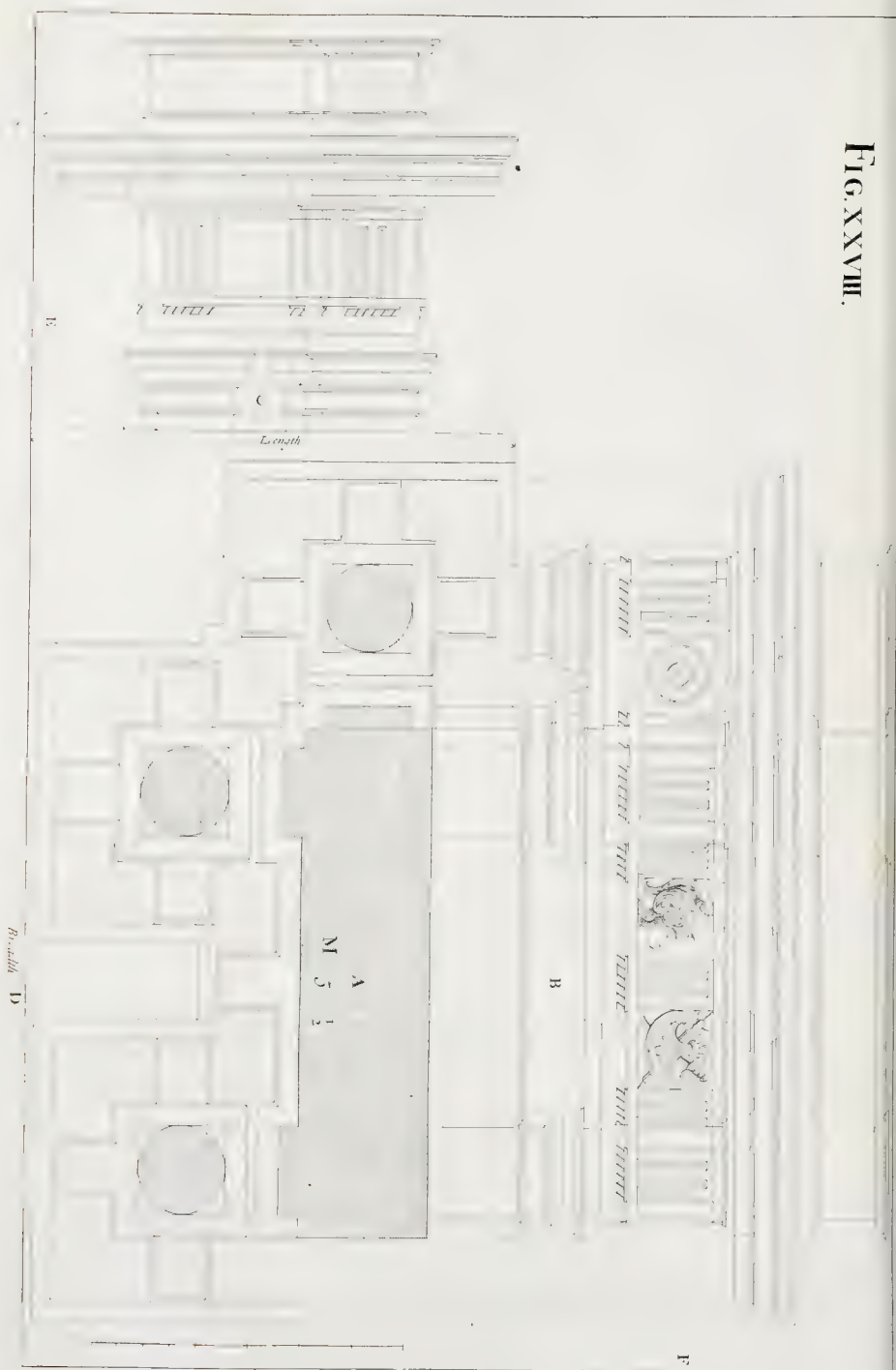


FIG. XXVII.



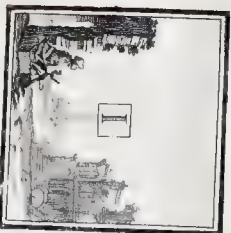
FIG. XXVIII.



Br. 1844 D

Figura Vigesima octava.

Præparatio figuræ ſequentis.



N figurâ vigesima octavâ, quæ continet veſtigium & elevationes geometricas figuræ vigesima nonæ, oportuit latus *C* delineare ſecundum à facie *B*; quia facies exhibet latitudinem ædificiî, latus vero exhibet longitudinem; atque una non eſt alteri æqualis. In veſtigio geometrico ſolidus paries eſt *A*: circuli reſerunt ſummum ſcapum columnarum. Cetera dant projecturas coronicis, cum ſuis mutulis.

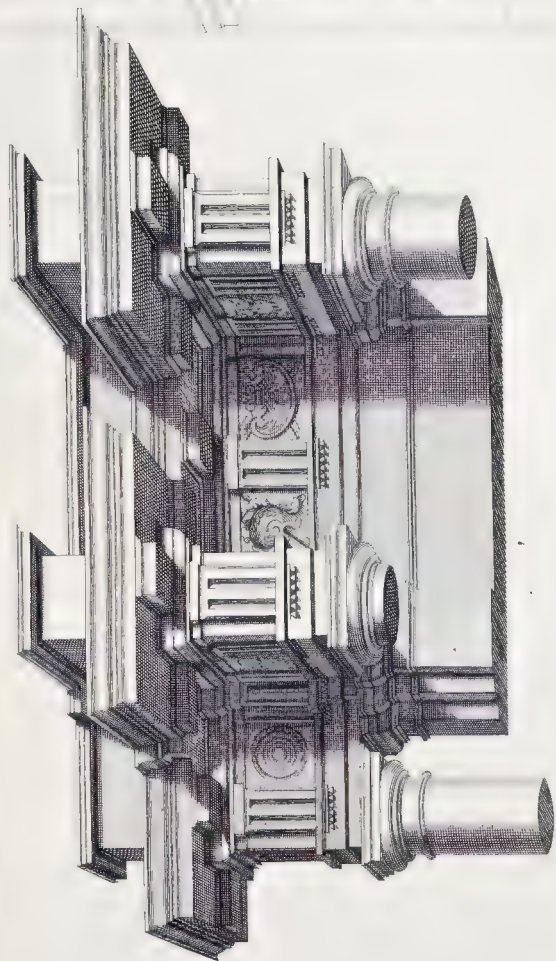
Twenty-eighth Figure,

Preparatory to the following Figure.



N this Twenty-eighth Figure, which contains the Plan and Geometrical Elevations of the Twenty-ninth Figure, it was requiſite to delineate the Side *C* ſeparately from the Front *B*; becauſe the Front, which ſignifies the Breadth of the Building, and the Side, which ſhews its Length, are not equal one to the other. In the Geometrical Plan the ſolid Wall is *A*: the Circles expreſs the Nakeds of the Pillars Shafts at top. The reſt is the Projecture of the Cornice, with its Mutules.

FIG. XXIX.



— — — — —



FIG. XXX.

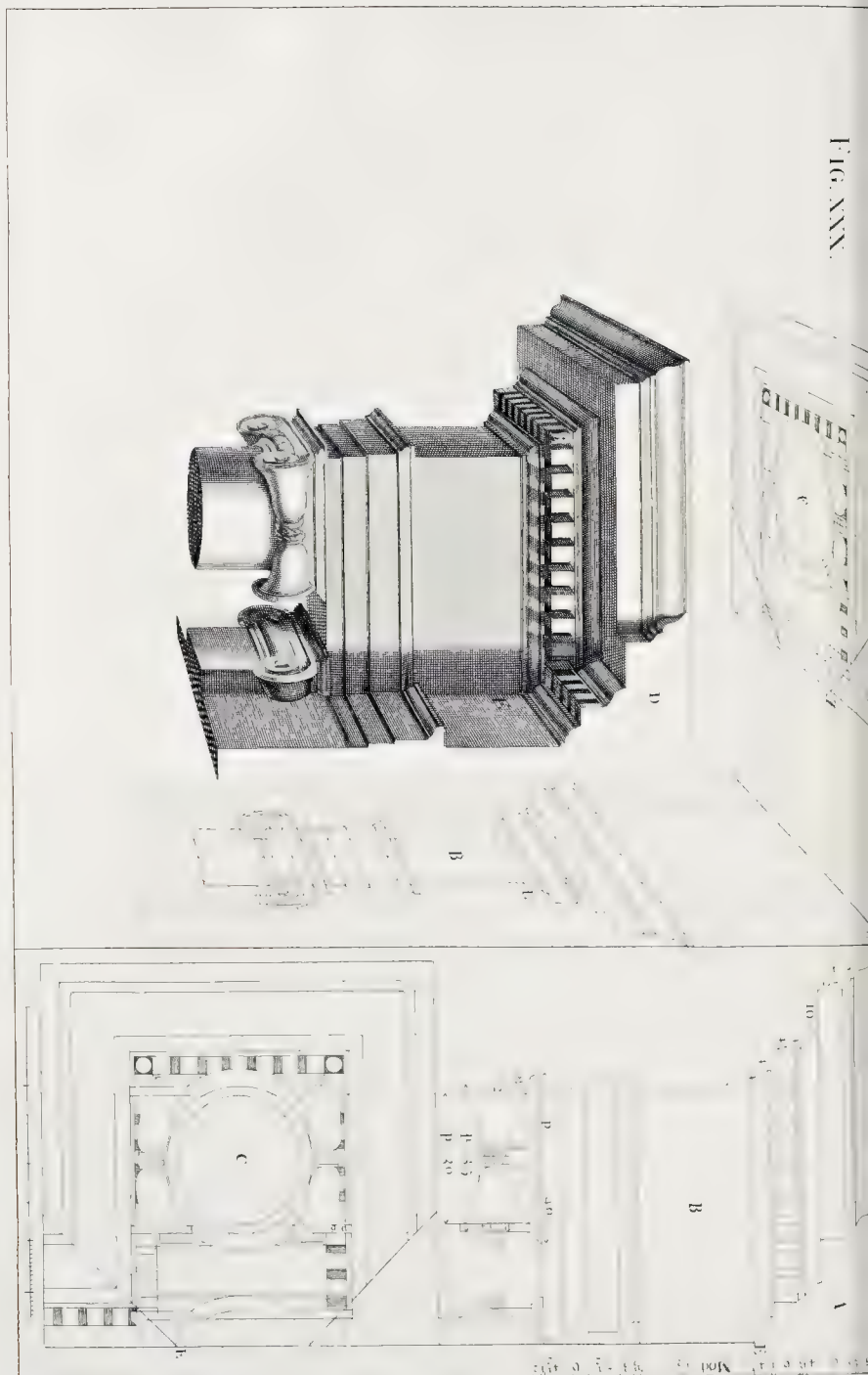


FIGURA Tigefima.

Optata projectio ædificii Ionicæ 3 ubi de modo imaginandi fictum cum vero.



I tibi Prætor quam sis, occasione præparatus quadraginta bonarum, vel septuaginta Domini, mutare ad tempus licet formam architecturæ aliudque Ecclesiæ iungendo fictum cum vero, ut mihi sensus contigit Michelani ac Romæ, cum viginti Spectatorum delectatione & admiratione; penitus ostendit tibi modum quem servare debes in operando.

Sectionis coronis veræ, quæ, ut suppono, videri debet continua esse cum coronæ pictæ in telario, est A 3 elevatio geometrica coronis, & reliquorum quæ delineanda sunt, est B 3 vestigium geometricum est C. Porro, non vestigium, non elevatio longitudinis optice contrahitur more consueti, ut vides in C & B: ex istisque formabitur in telario coronis nitida cum columna & anta 3 ipsaque reliquum depictum, normaliter coagmenandum erit veræ coronæ.

Ita fiat ea pars longitudinis, quæ coronicem pictam continuare videatur cum verâ, & erit non parvè ex elevatione deformata 3 oportet sectionem A transferre in D, dicendo visuales ex punctis terminativis membrorum sectionis D, usque dum occurrant lineis latitudinis eorundem membrorum. Quod si color res in relationem scitè inducantur, angulus in E, quavis more depictus, videbitur verus 3 & ex adverso, anguli quos telarium ipsam depictionem scitè cum diversis adò crepidinibus coronis veræ, nusquam apparebunt, præterquam in quadam sive dimittat 3 & mino architecturæ veræ cum ficta dignosci non poterit.

The Thirtieth Figure.

An Ionick Work in Perspective 3 with the Manner of reconciling the fictitious to the solid Architecture.



If, being a Painter, you were requir'd, against the Solemnity of the Holy-Week, to alter for a while the Architecture of some Altar-piece, by joining Painting to the real Work 3; as I have often done, both at Rome and Milan, to the great Satisfaction and Surprise of the Beholders: I shall briefly shew the Method to be observ'd in performing the same.

The Distinction of the solid Cornice, which I here suppose shall appear continu'd in that painted on the Canavals, is A; the Geometrical Elevation of the Cornice, and other Parts to be drawn, is B; the Geometrical Plan is C. The Plan and Elevation of the Length are put in Perspective after the usual manner, in C and B; from those the finish'd Cornice, with the Pillar and Pilaster, are delineated on the Canavals; and the Picture is then join'd, at right Angles, to the true Cornice.

For adjusting the Members so, that the painted Cornice may seem to be the real one continu'd, (which can't be done by the Perspective Upright) you must transfer the Section A to D; and from the terminating Points of the several Members thereof, draw visual Lines, till they meet those of their respective Members in the Perspective. And if the Colours are laid by a skilful Hand, the Angle at E, tho' painted only, will appear as real; and on the contrary, the Angles which the Members of the painted Cornice make with the different Projections of those of the true, will never be discern'd, unless in the very uppermost Fillet; but the Conjunction of the real with the painted Architecture, will be altogether imperceptible.

Figura Trigesima prima.

Optica projectio coronicis Corinthiæ, cum capitulo & summitate columnæ.



N hoc schemate linea plani est CIE, horizonis est DFO; punctum oculi est O, distantie est D. Elevatio geometrica capitelli Corinthii cum sua coronicæ est A, quorum divisiones connotantur in perpendiculari CD. Vestigium geometricum B habet longitudinem æqualem latitudini: optice autem contrahitur methodo consueta. Nimium, translatis divisionibus latitudinis & longitudinis in lineam plani CIE; ex punctis latitudinis sunt visuales ad punctum oculi; ex punctis vero longitudinis sunt occultæ ad punctum distantie: hoc modo habes quicquid necessarium est ad contractionem opticam vestigii. Nam linee longitudinum sunt partes visuales, ut patet in GN, HL: linee latitudinum, parallelæ ad lineam plani sunt ex punctis in quibus linee tendentes ad punctum distantie secant visuales HO, ut vides in NL. Porro, si tantundem prolongaveris horizontalis DO, ita ut habeat duo puncta distantie remota æqualiter ab O, medietas diagonalium, quæ sunt in quadrato majori GNHL optice deformato, & in quadratis ejus minoribus, tendent ad unum punctum distantie; altera medietas ad aliud punctum distantie.

Elevatio longitudinis optice contrahitur ductis parallelis ad CE, quæ ubi pervenerint ad visuales IO, continentur cum aliis parallelis ad IK. Præterea, translatis in lineam IK divisionibus linee perpendicularis CD, ex punctis divisionum sunt visuales ad punctum oculi, ac ducuntur singula membra ipsius elevationis, ejus latitudines sunt partes visuales, altitudines vero sunt partes linearum parallelarum ad IK. Diminui ex vestigio & ex elevatione longitudinis, formatur coronicæ nitida cum capitulo. Ut autem facilius delineetur muhi, primum sicut quadratâ formâ, ut in M; deinde congruus flexus in singulos inducitur.

The Thirty-first Figure.

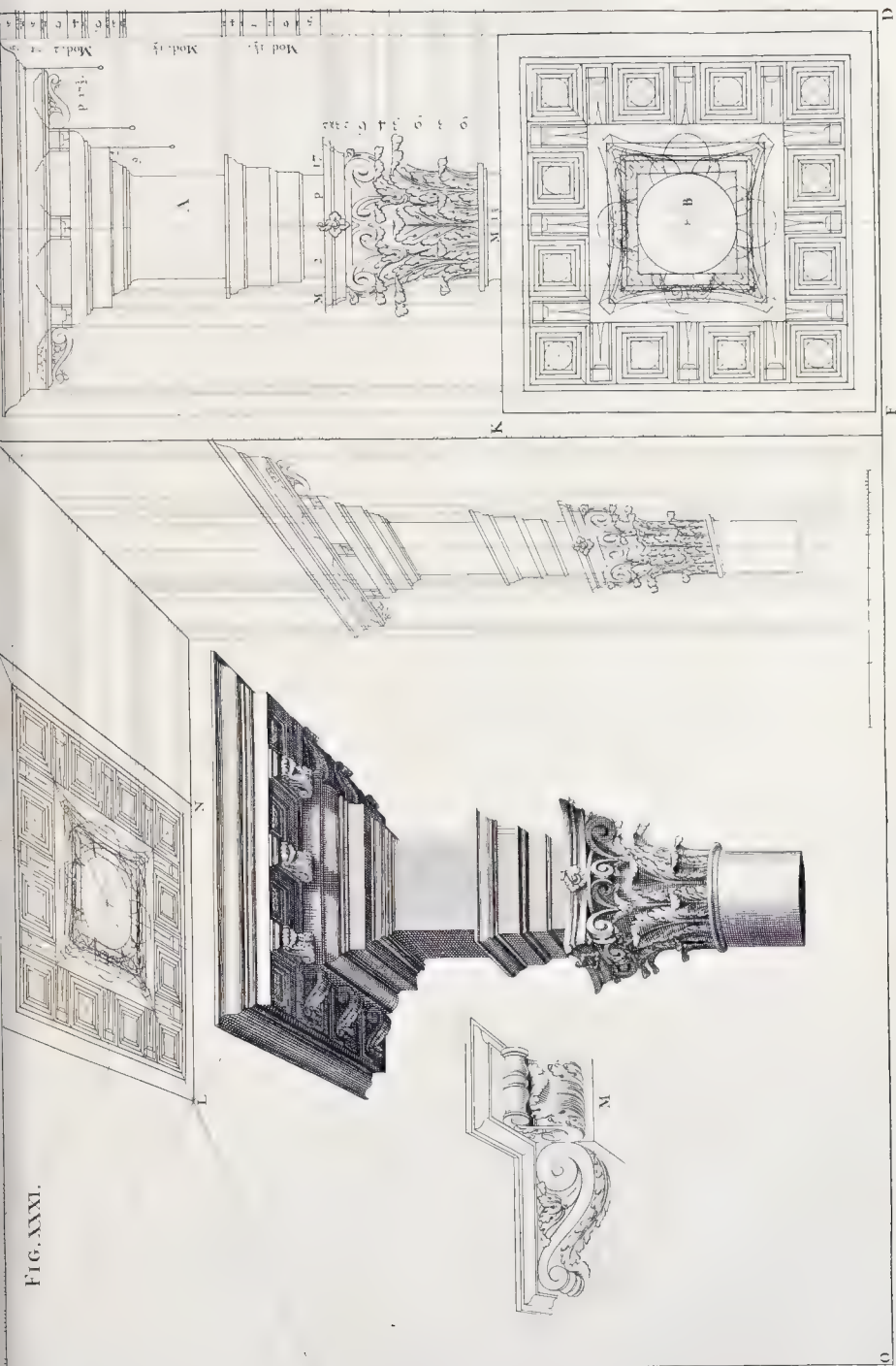
The Optick Projection of a Corinthian Cornice, with the Capital and PART of the Column.



N this Figure the Line of the Plan is CIE, that of the Horizon is DFO; the Point of Sight is O, the Point of Distance D; the Geometrical Elevation of the Corinthian Capital, with its Engraving, is A; whose Divisions are seen in the Perpendicular CD. The Length and Breadth of the Geometrical Plan B are equal, and the Plan is put into Perspective after the usual Method; to wit, by transferring the Divisions of Breadth and Length into the Line CIE; from the Points of Breadth drawing Visuales to the Point of Sight; and from those of Length occult Lines to the Point of Distance: by which Intersections you have all that's necessary for putting the Plan into Perspective. For the Lines of Length are Parts of visual Rays, as is manifest by GN, HL; and the Lines of Breadth are made Parallels to the Ground-line, from the Intersections before-mention'd, as is seen in NL. Moreover, if the Horizontal-line DO were so prolong'd, as to receive another Point of Distance equidistant from O; half the diagonal Lines of the great Square GNHL, and of the lesser Squares contain'd therein, would tend to one Point of Distance, and the other half to the other.

The Elevation of the Length is put in Perspective, by continuing the Parallels to CE, till they cut the Visual IO; and from thence dropping Lines parallel to IK: Then transferring into IK the Divisions of the Perpendicular CD, from them make visual Lines to the Point of Sight, and draw the several Members of the Upright; whose Breadths are Parts of Visuales, and their Heights Parts of Perpendiculars, or Lines parallel to IK. Lastly, from the Plan and Elevation of the Length, you delineate the fifth d Cornice and Capital: But that you may more easily draw the Moldings, first make them in a square Form, as in M; and that will very much assist you to give the Scroll of each a more agreeable Turn.

FIG. XXXI.





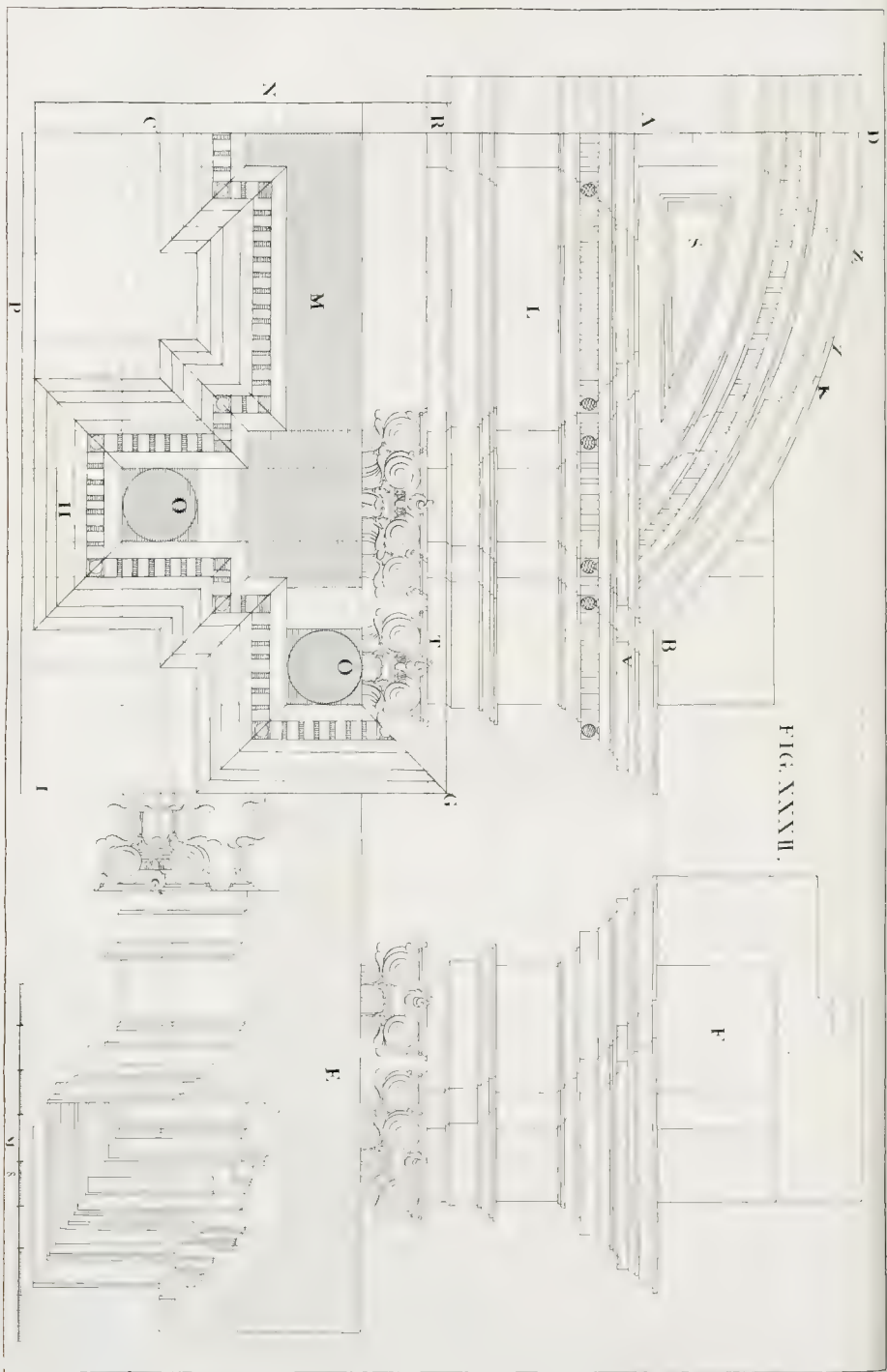
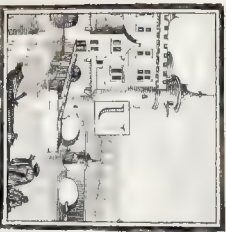


Figura Tigefinalecunda.

Delineatio geometrica coronicis,
Ordinis Compositi.

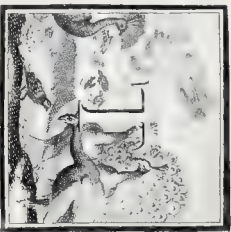


T hoc schema grandius ac distinctius esset, eius
medietatem dimittasat suscepit delineandam. P N
est vestigium geometricum. M est solidus paries.
O O spatia columnarum. In H sunt crepidines
coronicis. Elevatio geometrica latitudinis adificii
constat epistyllo T, zophoro L, & coronâ V, su-
pra quam eminet fastigium S.

Jam ut inveniantur centrum arcuum, distantie AV fiat equalis distantia A C.
Postaque una cuspidè circini in C, alia extendatur usque ad V : ita fient ar-
cus, quorum ultimus est BD, omnesque sunt concentrici. Elevatio F ostendit
longitudinem adificii ex parte GI ; elevatio E ostendit longitudinem ipsius ex
parte D R.

Thirty-second Figure.

The Geometrical Design of a Cornice, of the
Composite Order.



HAT this Figure might be larger and more di-
stinct, I have here describ'd only the Half of it.
P N is the Geometrical Plan. M is the solid
Wall. O O are the Places of the Columns.
H shews the Projectures of the Cornice. The
Geometrical Elevation of the Breadth of the
Frontispiece, consists of the Architrave T, the
Frieze L, and the Cornice V, over which is
rais'd the Pedament S.

For finding the Center of the arch'd Lines of the Pedament, make the
Distance A C equal to that of AV ; and placing one Point of the Con-
passes in C, extend the other to V, and describe the Arch. The other
Arches, of which BD is the utmost, have all the same Center. The E-
levation F shews the Length of the Work on the Side GI. The Upright
E shews the Length of the same on the Front D R.

Figura Trigefimatertia.

Deformatio coronicis Compositæ.



ICURA hæc trigefimatertia minus ardua tibi videbitur, si ex ea delineandam primùm fufcipias medietatem quæ refpondet veftigio P N & elevationi BR figure trigefimefecundæ; reſpecto in ultimum veftigio, poſtquam cætera compleveris. Linea BV eſt horizontalis. Punctum oculi eſt V, punctum diſtantiæ remotum eſt ab V ſpatio BV, additis modalis quatuordecim cum dimidio. Linea plani eſt AR, in quam ex Q verſus A tranſferatur latitudo P; ex Q verſus R tranſferatur longitudo N, cum omnibus earum diviſionibus; ut ex punctis latitudinis ſiant viſuales ad punctum oculi; & ex punctis longitudinis ſiant occultæ ad punctum diſtantiæ. Ex his habes quicquid neceſſarium eſt ad projectionem opticam veſtigii, ut oſtendimus figurâ trigefimæprimâ. Eademque methodo, quam ibi ſervavimus, contrabes elevationem P longitudinis coronicis: ac tum ex illa, tum ex veſtigio, eruetur cornice nitida more conſuecto.

Ut delineetur veſtigium, transferende ſunt in lineam AB diviſiones ipſius ex elevatione F figure trigefimefecundæ, ac decende viſuales ad punctum oculi, additis lineis terminativis uniſcuſque membri, quæ accipiantur ex veſtigio Q optice deformato. Centrum O arcuum veſtigii nitidi, remotum eſt à ſummitate coronicis, medietate diſtans, quam habent angues quadæ cui veſtigium iſſum incumbit. Ac providè, ſi accipias ex elevatione P diverſas altitudines membrorum veſtigii; latitudines verò accipias ex veſtigio Q; opus tuum feliciter abſolveſ.

The Thirty-third Figure.

A Composite Cornice in Perſpective.



HIS Thirty-third Figure will be found the leſs difficult, if you firſt attempt that Half which answers to PN in the Plan, and BR in the Upright of the Thirty-second Figure; leaving the Pedament, till all the reſt be finiſh'd. The Line BV is the Horizontal. V is the Point of Sight; the Point of Diſtance is fourteen Modules and a half without the Point B, more than the Interval BV. The Line of the Plan is AR, in which from Q toward A you have the Diviſions of Breadth of the foregoing Plan P; and from Q to R thoſe of the Length thereof N: From the former, Viſuals are drawn to the Point of Sight; and from the latter, occult Lines to the Point of Diſtance. And from theſe you have all that's neceſſary for putting the Plan in Perſpective; as was ſhewn in the Thirty-ſiſt Figure. By the Method there obſerv'd, you may alſo deſcribe the Perſpective-Elevation of the Length P; and from this, and the Plan, delineate the finiſh'd Cornice after the uſual Manner.

For making the Pedament, the Diviſions of the Elevation F in the Thirty-second Figure, muſt be tranſſer'd into the Line AB, and Viſuals drawn from them to the Point of Sight; giving to each Member its proper Out-line and Contour, as may be taken from the Perſpective-Plan Q. The Center O of the Arches in the finiſh'd Pedament, is plac'd below the upper Member of the Cornice, as much as half the Extent of the upper Fillet from whence the Pedament ſprings. And by taking the ſeveral Heights of the Members thereof, from the Elevation P; and the Breadths from the Plan Q; you will ſucceſſfully finiſh and complete your Work.

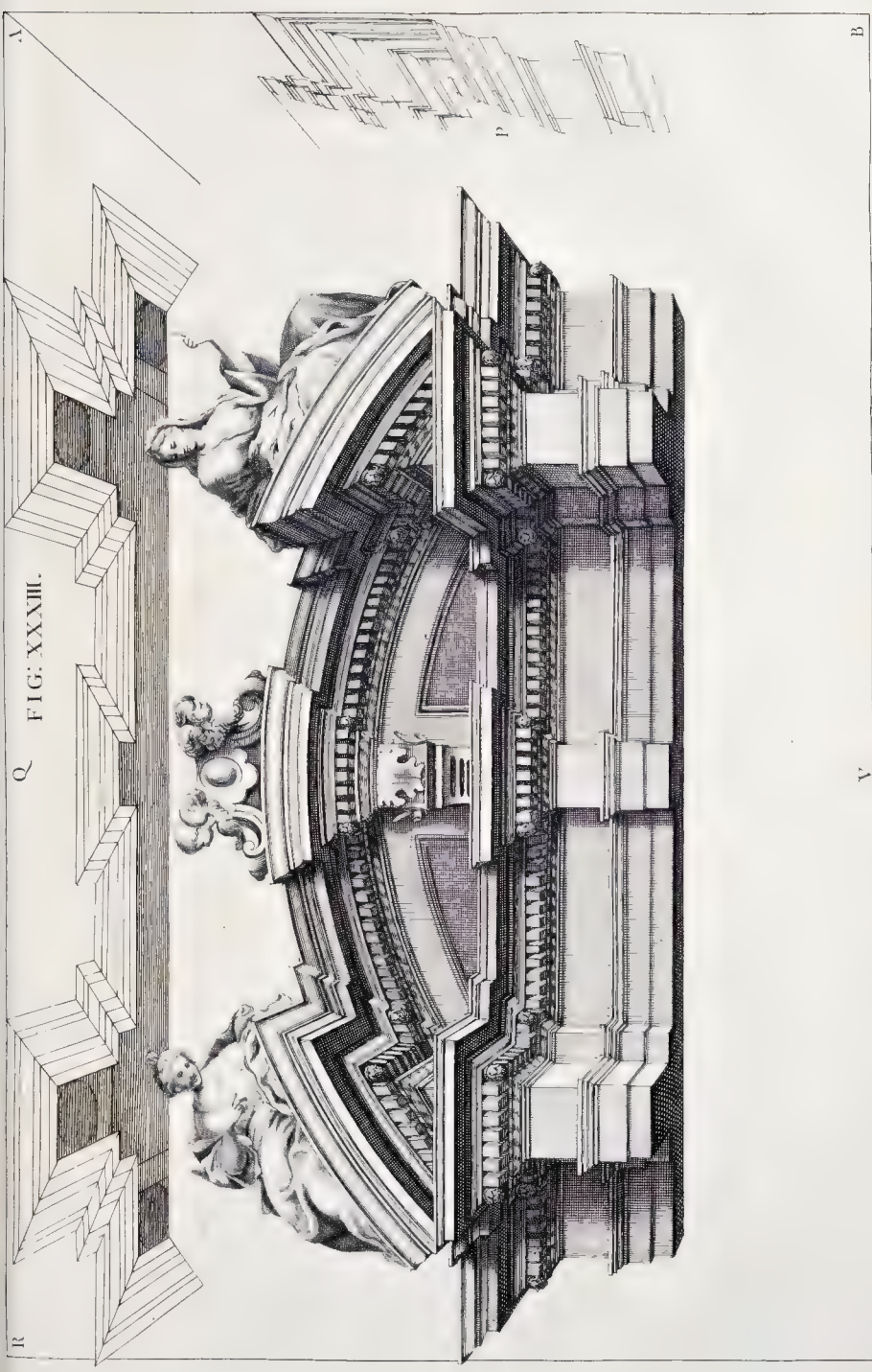
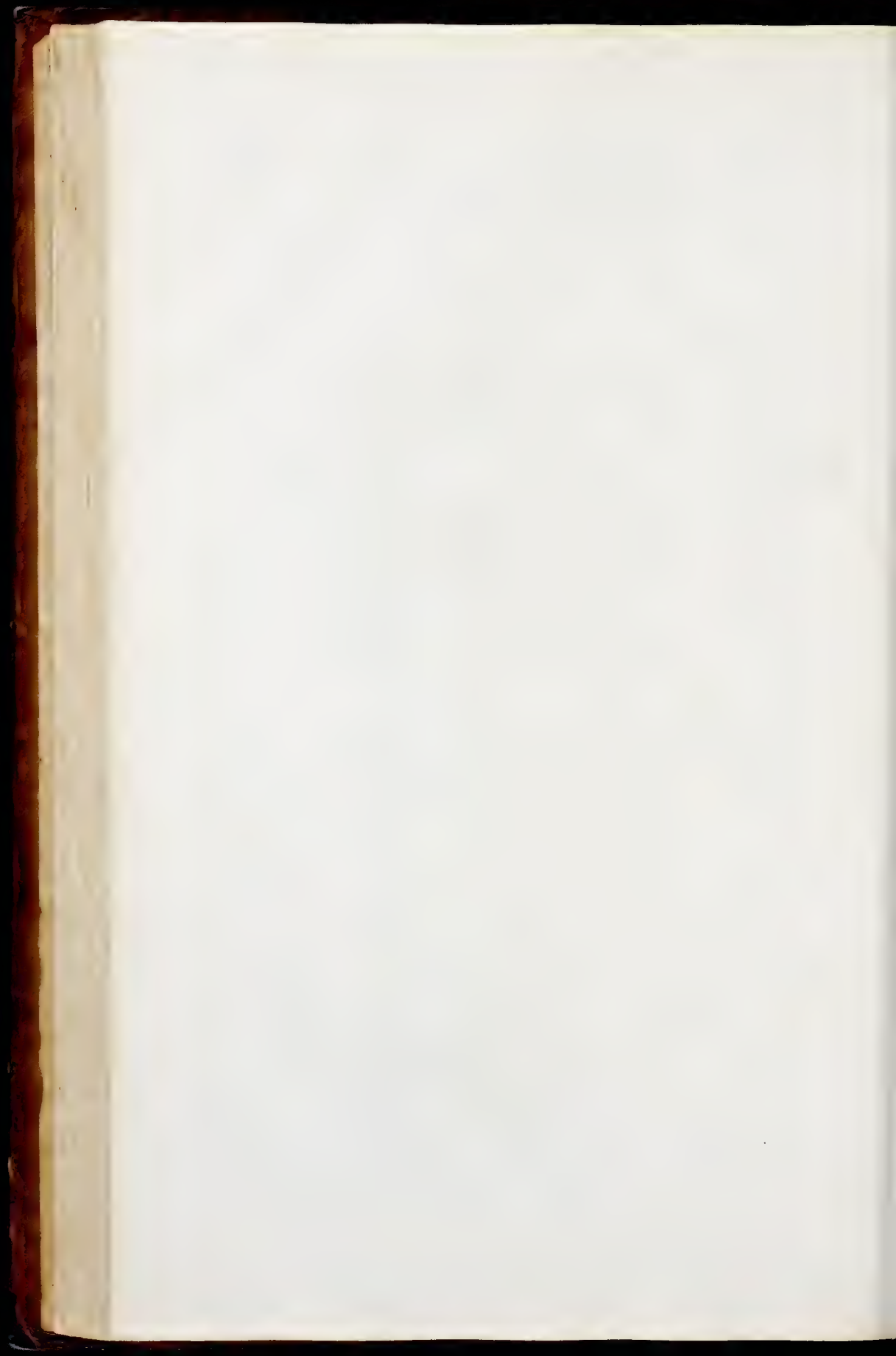


FIG: XXXIII.

Y
O



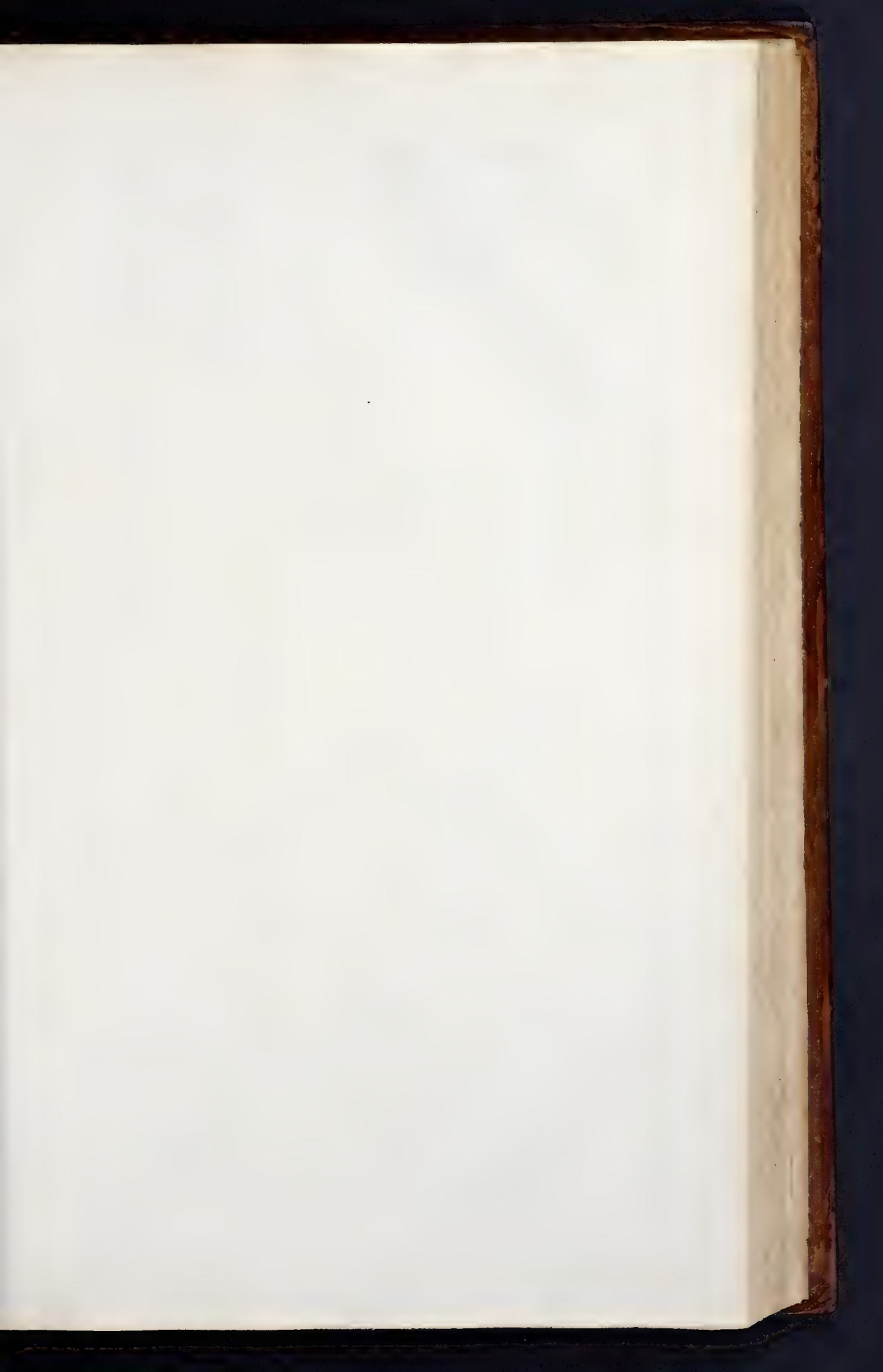


FIG. XXXIV.

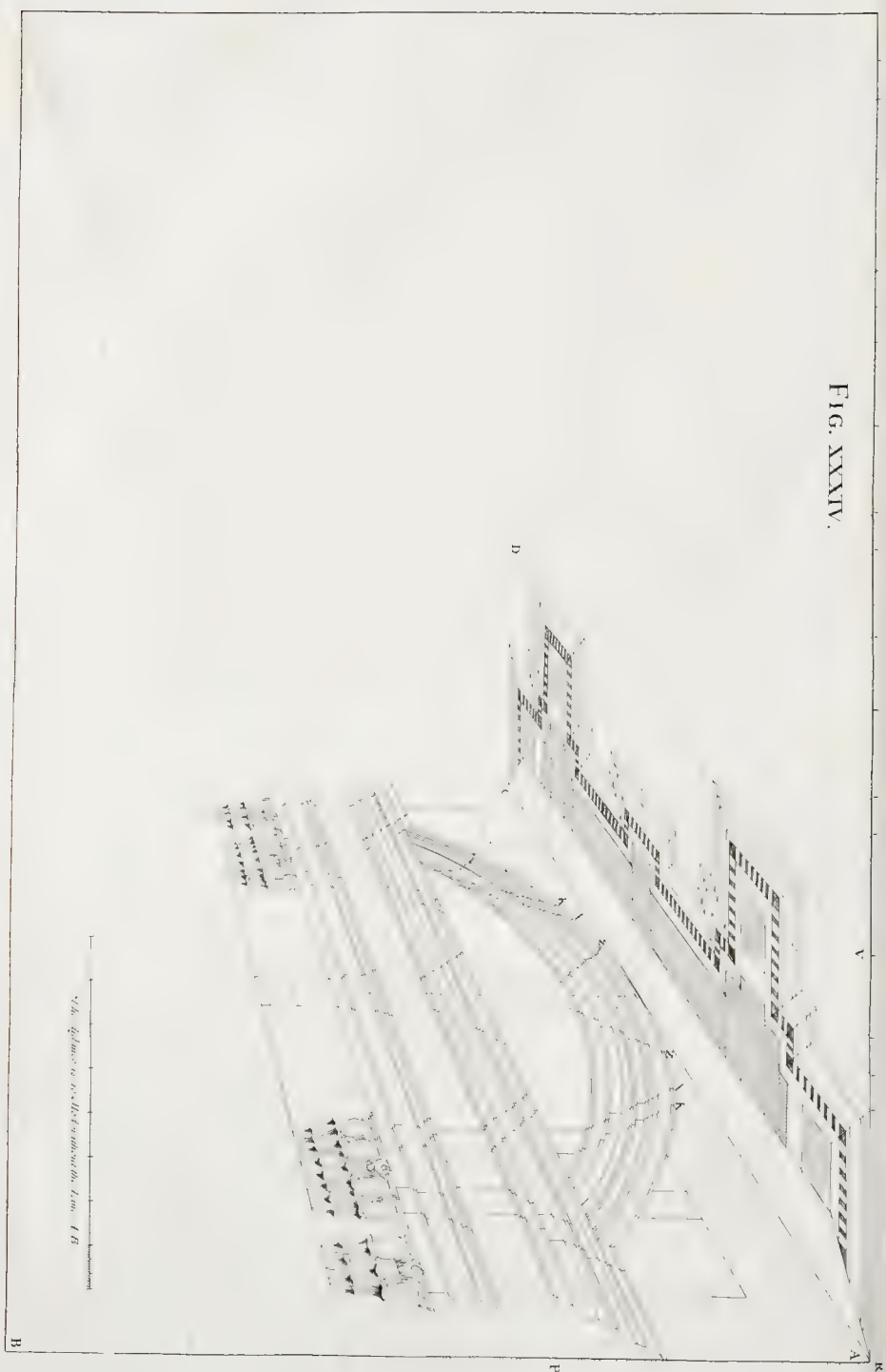


Figura Trigesimaquarta. Præparatio ad figuram trigessimam quintam.



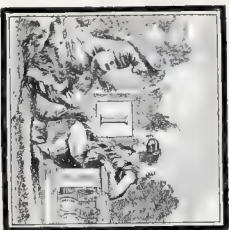
I præparati conferre figuram trigessimam quintam cum præfenti figurâ trigessimâ quartâ, æquales vespigium & elevationem coronicis Compositæ alio modo hic deformari, mutando scilicet longitudinem in latitudinem, & latitudinem in longitudinem. Propterea hæc figurâ tantum sumi occupat, ut cum sensum à coronicâ mitida delineare oportuerit.

Divisiones latitudinis in vespigio incipiunt ex V versus R, & sunt eadem cum divisionibus rectæ IG figuræ trigessimæ secundæ. Divisiones longitudinis incipiunt ex V versus S, & sunt eadem cum divisionibus rectæ IP applicatis. Ex divisionibus latitudinis sunt vespigiales ad punctum oculi; ex divisionibus longitudinis sunt rectæ ad punctum divinitie; cum reliquis quæ necessaria sunt ad complementum vespigium AVDC.

Elevationis longitudinis coronicæ & fessigii, optice contrahitur per lineas parallelas ad lineam plantæ AS; quæ ubi pervenerint ad vespigium AC, continuantur cum aliis parallelis ad perpendicularium P, ut diximus figurâ trigessimâ primâ. In eadem perpendicularium P transferuntur ex figurâ trigessimâ secundâ divisiones rectæ DR; & insuper altitudines, quæ punctis K XZ habent supra rectam VA; suntque vespigiales ad punctum oculi; fessiones autem vespigium cum parallelis ad perpendicularium P, ab ubi sex punctis sine fessigii, respondentis punctis K XZ applicatis, figuræ trigessimæ secundæ; eorumque ductus formandus est supremis arcus. Eadem artificibus sunt reliqui omnes.

Facilius delineabitur coronicæ, cuius maximam partem occupant lineæ vespigiales ad punctum oculi; porro, membra omnia, excepta finis, communia sunt coronæ & fessigii. Adæque puncta finitima in lineis terminatis memborum frangulorum, ex quibus designantur crepidines & anguli figuræ mitidæ, sunt parallelas ad perpendicularium P.

The Thirty-fourth Figure, Preparatory to the Thirty-fifth.



If you please to compare the Thirty-third Figure with this Thirty-fourth Figure, you will perceive the Plan and Elevation of this Composite Cornice to be delineated differently from that; to wit, by making the Length of that the Breadth of this, and the Breadth of that the Length of this: On which account, this Figure takes up to much Room, that there was a necessity of drawing the finish'd Cornice on a separate Paper.

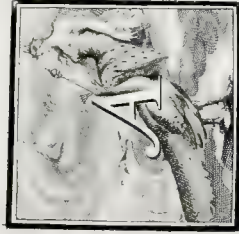
The Divisions of Breadth in the Plan begin from V toward R; and are the same with those of the Line IG in the Thirty-second Figure. The Divisions of Length are set from V toward S; and are the same with those of the Line IP in the Thirty-second Figure; which being the Half, is here doubl'd. From the Divisions of Breadth, Lines are drawn to the Point of Sight; and from those of the Length, Lines to the Point of Distance; with the farther Requiesces for completing the Plan AVDC, in Perspective.

The Upright of the Length of the Cornice and Pedament, is made by producing Parallels to the Ground-line AS; till they intersect the Visual AC; and thence continuing Lines parallel to the Perpendicular P, as was directed in the Thirty-first Figure. Into the same Perpendicular P are transfer'd the Divisions of the Line DR in the Thirty-second Figure; and also the Heights which the Points K XZ have above VA in the same Figure. From all which, Vituals are drawn to the Point of Sight; which being intersected by the Perpendiculars, give fix Points on the *Cima* of the Pedament, which answer to the said Points K XZ of the Thirty-second Figure, doubl'd: By these the outward Arch is form'd. And by the same Rule, you find Points for all the others.

You will more easily draw the Cornice, the greatest Part of it consisting of vitual Lines to the Point of Sight: Moreover, all the Members, except the upper *Cima*, are common both to the Cornice of the Entablature, and to the Pedament; so that the corresponding Points, in the Outlines of their several Members, from whence the Breaks and Contours of the finish'd Piece are taken, are found in the same Parallels to the Perpendicular P.

Figura Trigesimaquinta.

Deformatio coronicis Compositæ,
ad latus inspectæ.

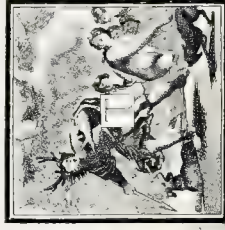


ARTIFICIUM nitidæ coronicæ, ex vestigio & elevatione figuræ trigesimaquarte eructuæ, non dif-
fert ab eo quod sæpè traditum est. Itaque sup-
posito, quod linea plani & horizontis, ac puncta o-
culi ac distantie, habuunt in hoc schemate situm
omnino eundem, quem habent in præcedenti; ope-
duorum circinorum, inveniuntur distantie, quas an-
guli necessarii ad integram denominationem coronicis,
habent à linea plani, & à linea normali ad ipsam lineam plani. Nam di-
cendo lineas visuales, aliasque lineas parallelas ad ipsum perpendicularum, cum
terminis & flexibus qui conveniunt singulis membris, compleretur deline-
atio.

In fastigio visuales sunt penitus occultæ: puncta autem similia H & L,
ex quibus fastigium incipit introsum flæcti, incidunt in unam eandemque visu-
alem. Illud dico de aliis punctis similibus. Nam lineæ rectæ omnes, quæ
in figura trigesimaquarta sunt parallelæ ad lineam plani, in figuris trigesima-
quarta & trigesimaquinta sunt partes linearum visualium.

The Thirty-fifth Figure.

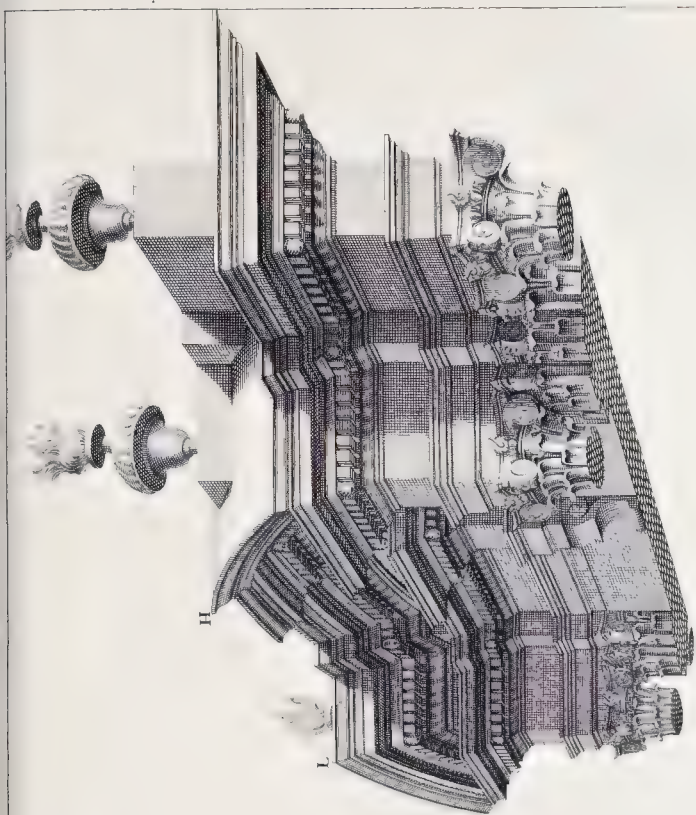
*A Side-View of the Composite Cornice,
in Perspective.*

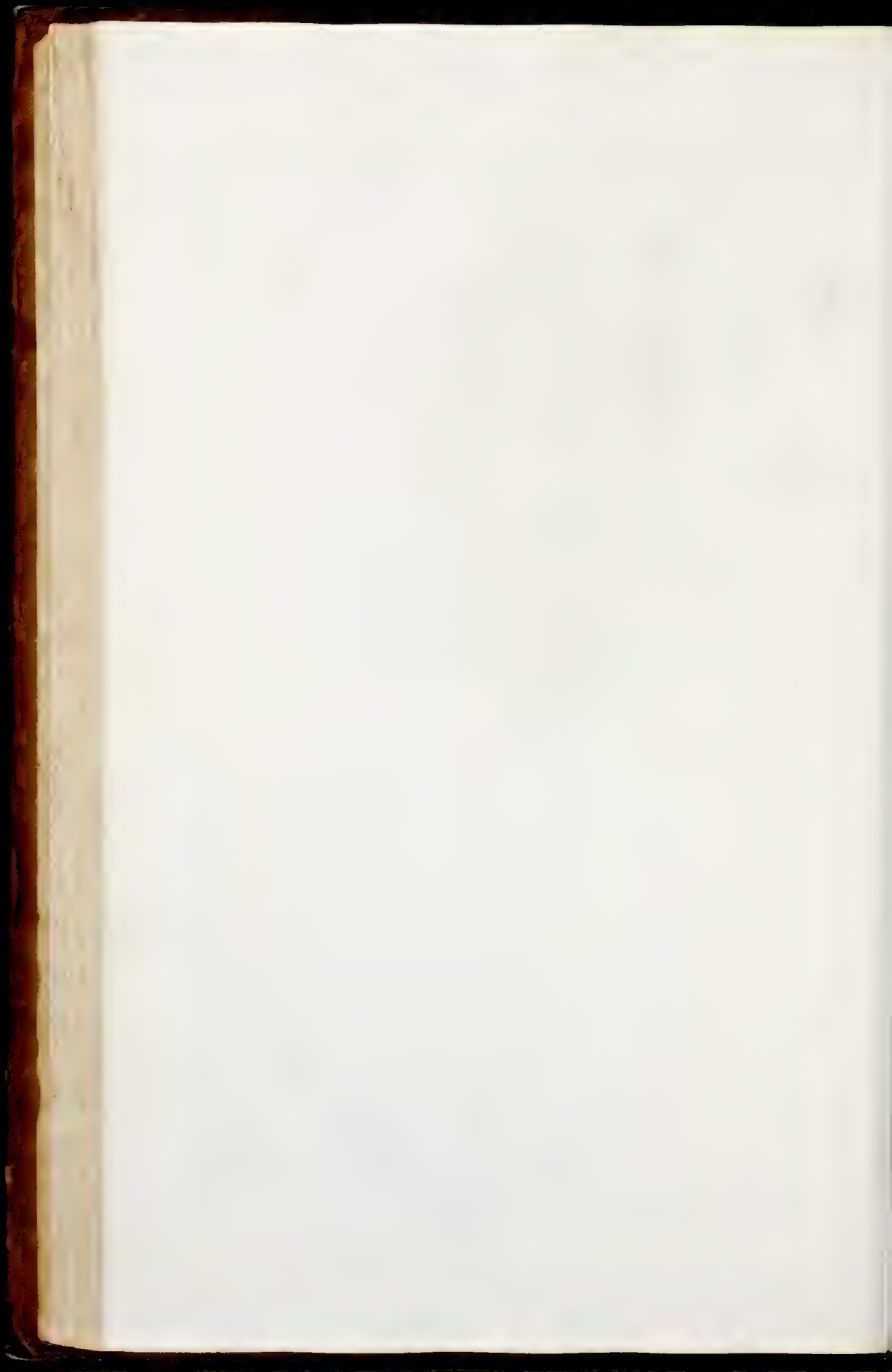


THE Manner of drawing this finish'd Cornice, from the preceding Plan and Elevation, is the same with that so often shewn you. Admit-
ting therefore, that the Lines of the Plan and Horizon, and the Points of Sight and Distance, have the very same Position in this, that they had in the preceding Scheme; all the Angles necessary for delineating the entire Cornice, are readily found by the help of two pair of Compasses; taking their Distances one way from the Ground-line; and the other way from a Line perpen-
dicular to the same: Then drawing the visual and perpendicular Lines, and keeping the Place and Contour of the several Mouldings, you com-
plete your Design.

In the Pedament the visual Lines are wholly occult; and the Points H and L, where the Pedament begins to break back, being of like Height, are found in one and the same Visual: And the same may be said of all Points that are of equal Height from the Plan; for all the right Lines, which in the Thirty-third Figure are Parallels to the Ground-line, in the Thirty-fourth and Thirty-fifth Figures are Parts of the visual Lines.

FIG. XXXV.





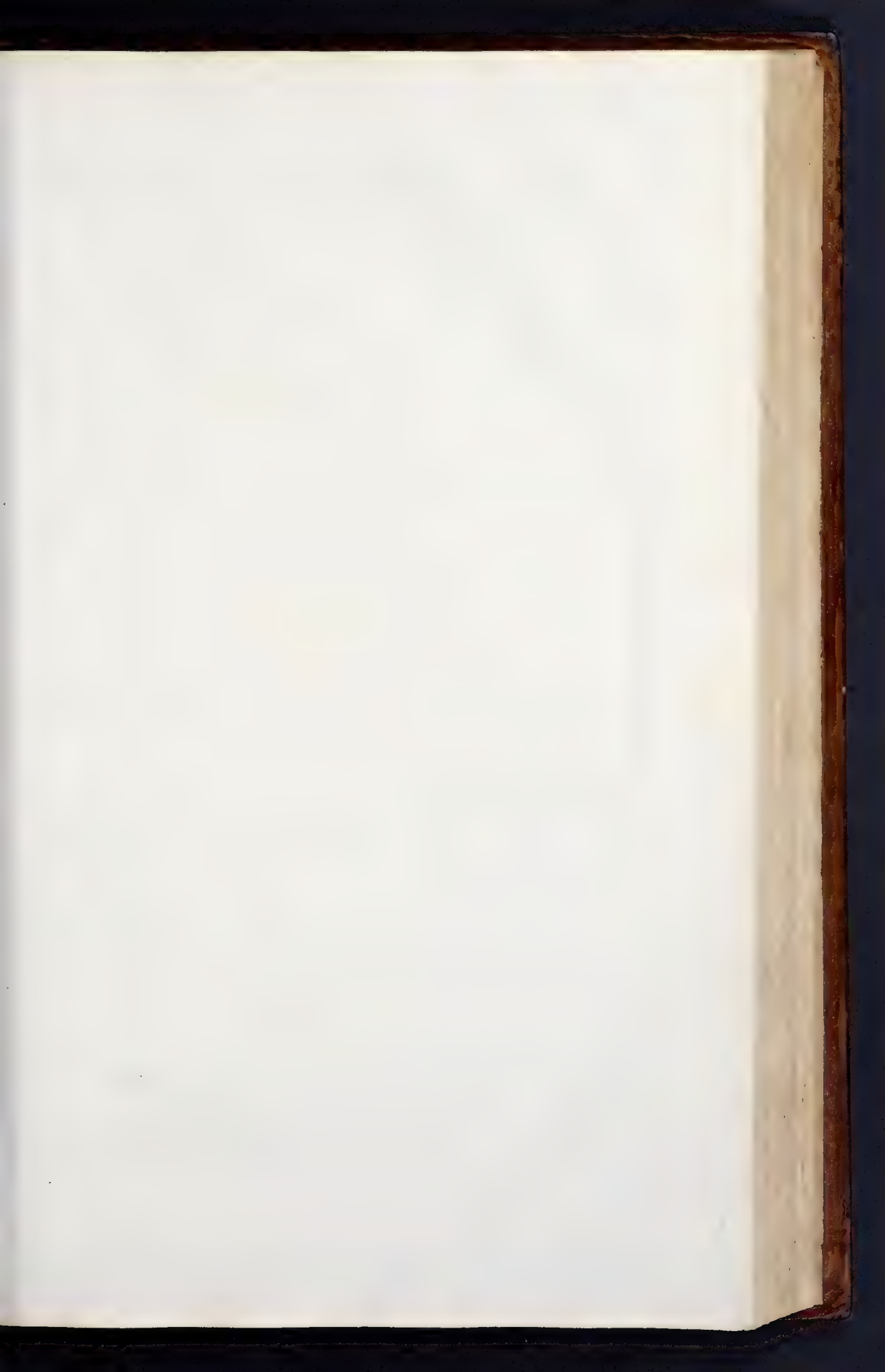
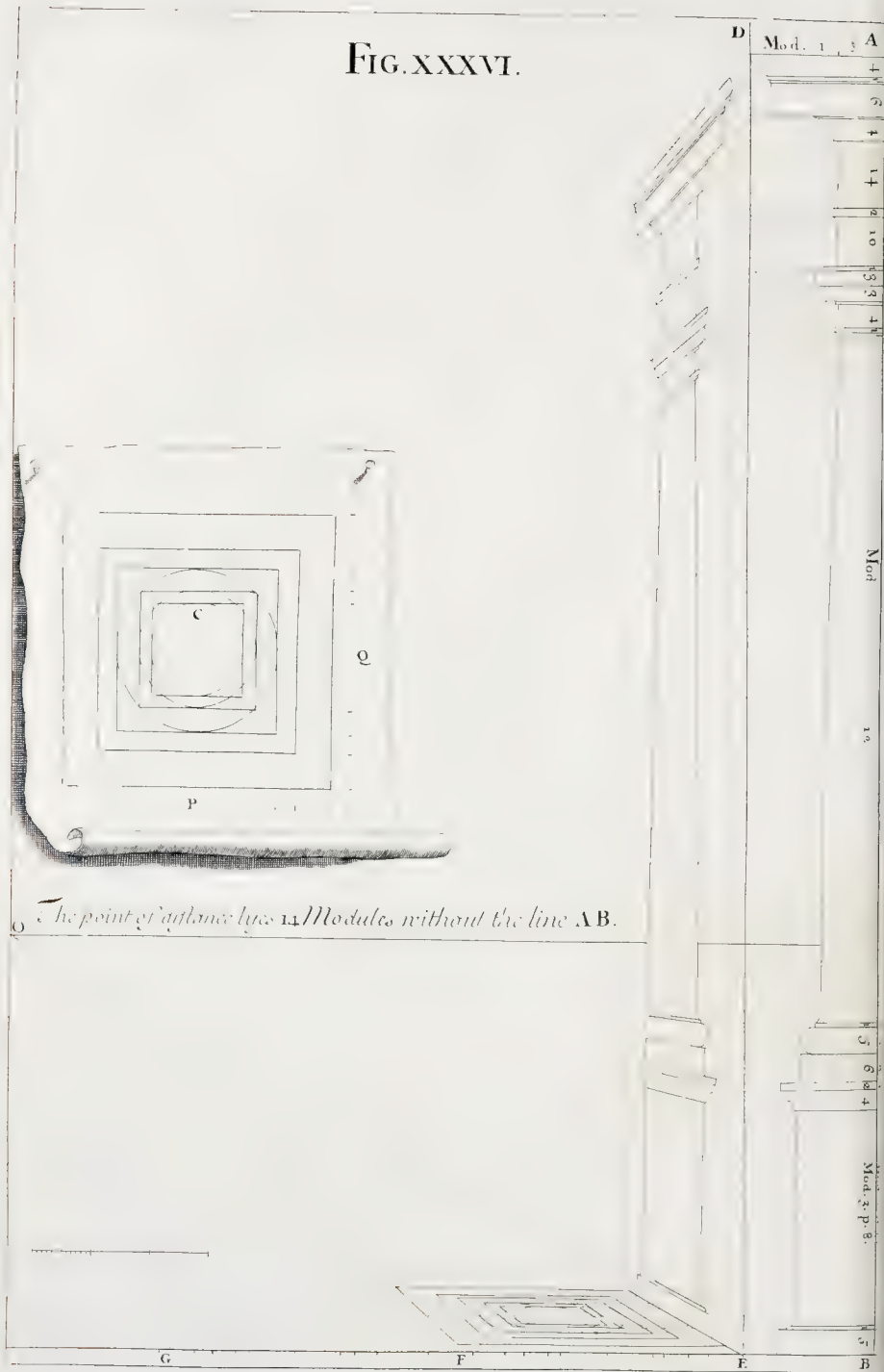


FIG. XXXVI.



The point of angle has 14 Modules without the line AB.

FIGURA Trigesimasexta.

Præparatio ad figuram trigesimamseptimam.



N vestigio geometrico C, & in ejus elevatione AB, præcipuas tantum lineas adnotavi, ne figuram confunderem, & ut studiosorum industriæ aliquid relinquerem. Linea plani EG habet divisiones latitudinis P, & longitudinis Q, vestigii geometrici C. Ex punctis latitudinis ducentur more solito visuales ad O punctum oculi; ex punctis longitudinis fient occultæ ad punctum distantiae, quod extra lineam AB protenditur modulis quatuordecim: & ubi occultæ ex divisionibus longitudinis secant visualet FO sunt parallelæ ad lineam plani EF, adhibitis sectionibus talium parallelarum cum visualibus, ad

complendam deformationem vestigii.

Eadem lineæ quæ in vestigio deformato sunt parallelæ ad EF, prolongantur usque ad visualet EO, & continuantur cum aliis parallelis ad perpendicularum DE. Fiant quoque visuales ad punctum oculi ex divisionibus elevationis AB translatis in perpendicularum DE; adhibitis sectionibus talium parallelarum cum visualibus, ad complendam deformationem longitudinis elevationis.

The Six and thirtieth Figure,

Preparatory to the Thirty-seventh.



N the Geometrical Plan C, and in the Elevation thereof AB, I have only mark'd the principal Lines, as well for avoiding Confusion in the Figure, as that something might be left to the Industry of the Studious. The Line of the Plan EG has the Divisions of Breadth P, and of Length Q, of the Geometrical Plan C. From the Points of Breadth are drawn, as usual, Visuals to the Point of Sight O; From the Points of Length occult Lines are produc'd to the Point of Distance, which lies fourteen Modules without the Line AB: And where the occult Lines

from the Divisions of Length cut the Visual FO, Parallels are made to the Ground-Line EF; and from the Intersections of those Parallels with the Visuals, you complete the Delineation of the Plan in Perspective.

The Lines which in the Plan are parallel to EF, being prolong'd to the Visual EO, are then continu'd parallel to the Perpendicular DE. And from the Divisions of AB, produc'd to DE, visual Lines are drawn to the Point of Sight; which intersecting the Perpendiculars aforesaid, you from thence find the Length of the Elevation in Perspective.

FIGURA Trigesimasseptima.

Deformatio columnæ Etruscæ.



X præparatione quam exhibuimus figurâ trigesimasextâ, eruitur columna hæc nitida Ordinis Etrusci, opticè imminuta per latitudines & altitudines partium singularum; quæ accipiuntur ope duorum circinorum, ut sæpius dictum est.

The Thirty-seventh Figure.

A Tuscan Column in Perspective.



FROM the Preparation exhibited in the Thirty-sixth Figure, is drawn this complete Piece of the *Tuscan* Order, brought into Perspective by means of the Breadths and Heights of the several Parts, exactly taken off with the Compasses, as has been often said.

FIG. XXXVII.



Q

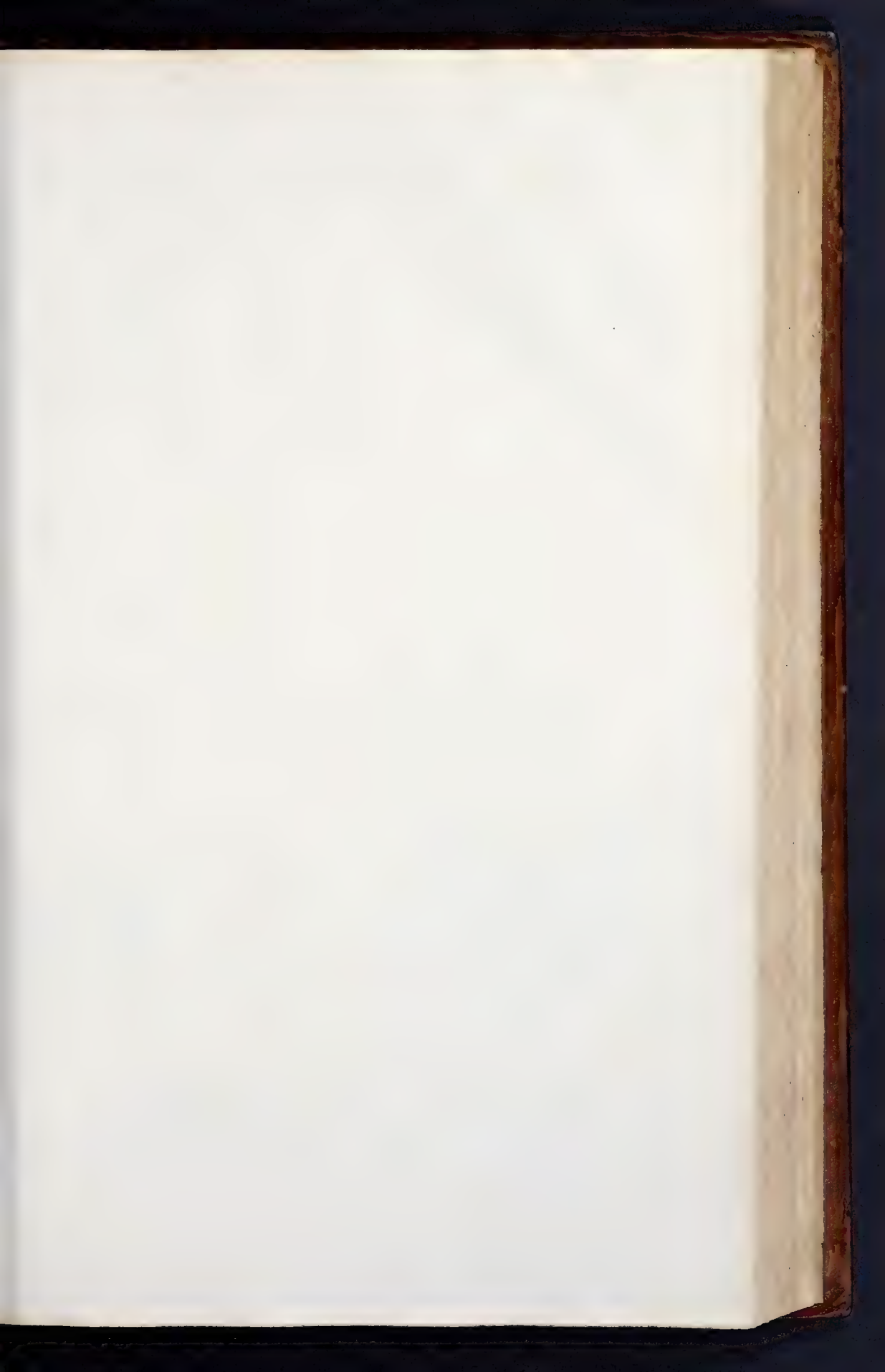
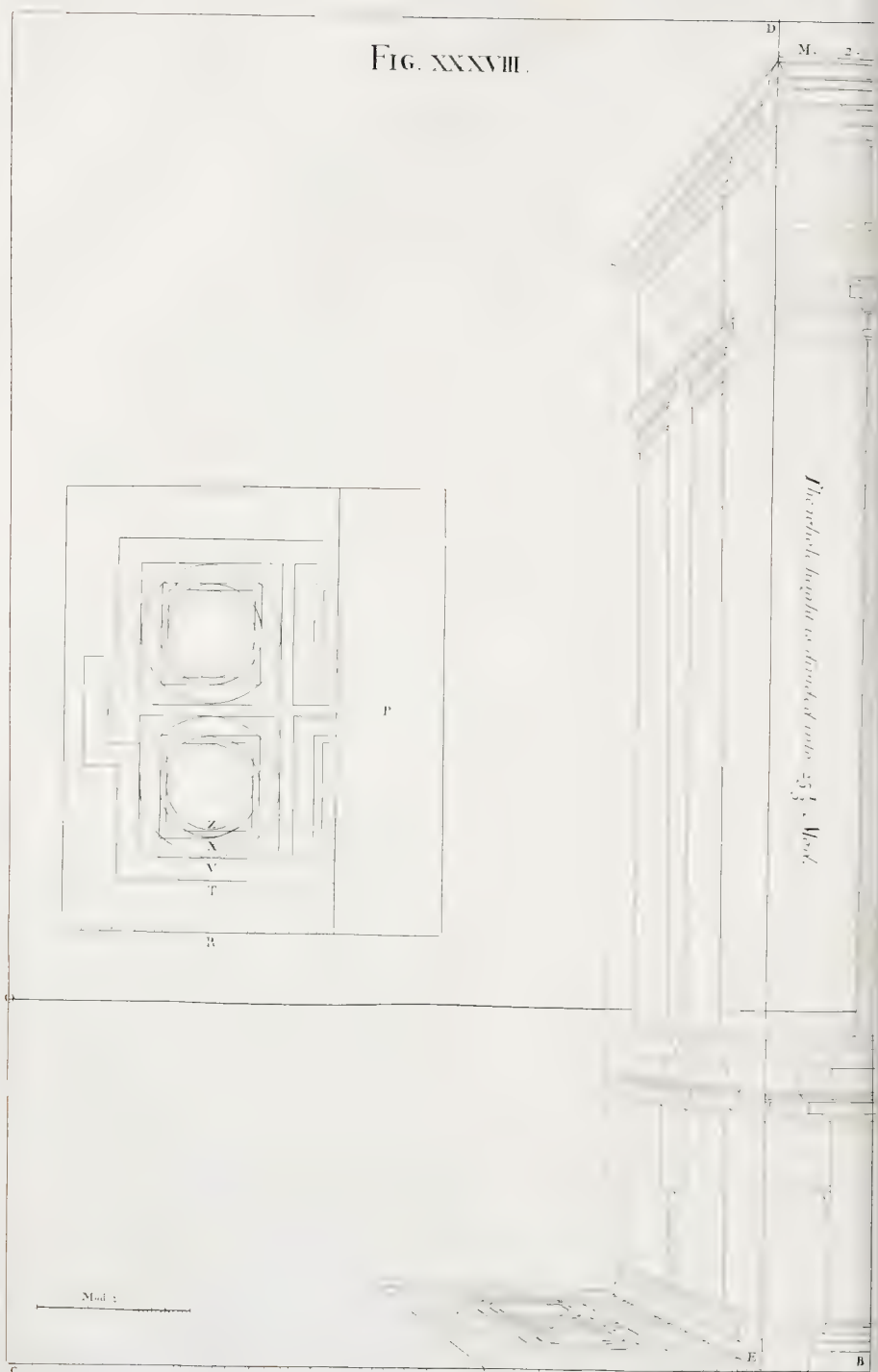


FIG. XXXVIII.



The depth is 15. Mod. without the T. A B.

FIGURA Trigesima-octava.

Præparatio ad figuram trigesimamnonam.



ÆC figura est simillima figuræ trigesimæ sextæ. In vestigio P limes prominentiæ coronicis est R; coronæ verò in stylobatâ est T. soliditas stylobatæ est V. ambitus columnæ in imo est X, in summo Z.

The Thirty-eighth Figure,

Preparatory to the Thirty-ninth.



HIS Figure is very much the same with the Thirty-sixth. In the Plan P, the utmost Projecture of the Cornice is R; that of the Cap of the Pedestal is T; the Trunk of the Pedestal is V; the naked Shaft of the Column at bottom is X, at top is Z.

FIGURA Trigesimanona.

Deformatio ædificii Dorici.



ABES hoc loco ædificium Doricum, addito statuæ unius ornamento. Velim autem, ut si figuram aliquam ex his desumptam, delineandam assumas, aliquid mutes saltem in loci punctorum oculi aut distantia. Hoc modo majores in hac arte progressus facies; & si alicubi cælator aberraverit, ex lapsu illius nullum senties detrimentum.

The Nine and thirtieth Figure.

A Piece of Dorick Architecture in Perspective.



IN this Plate you have a *Dorick Composition*, with the additional Ornament of a single Statue; but I would advise, when you undertake to work after any of these Designs, you would at least place the Points of Sight and Distance somewhat differing from those here given; which Practice will both greatly further your Progress in this Art, and prevent any Inconvenience, that may arise from a Mistake of the Engraver.

FIG. XXIX



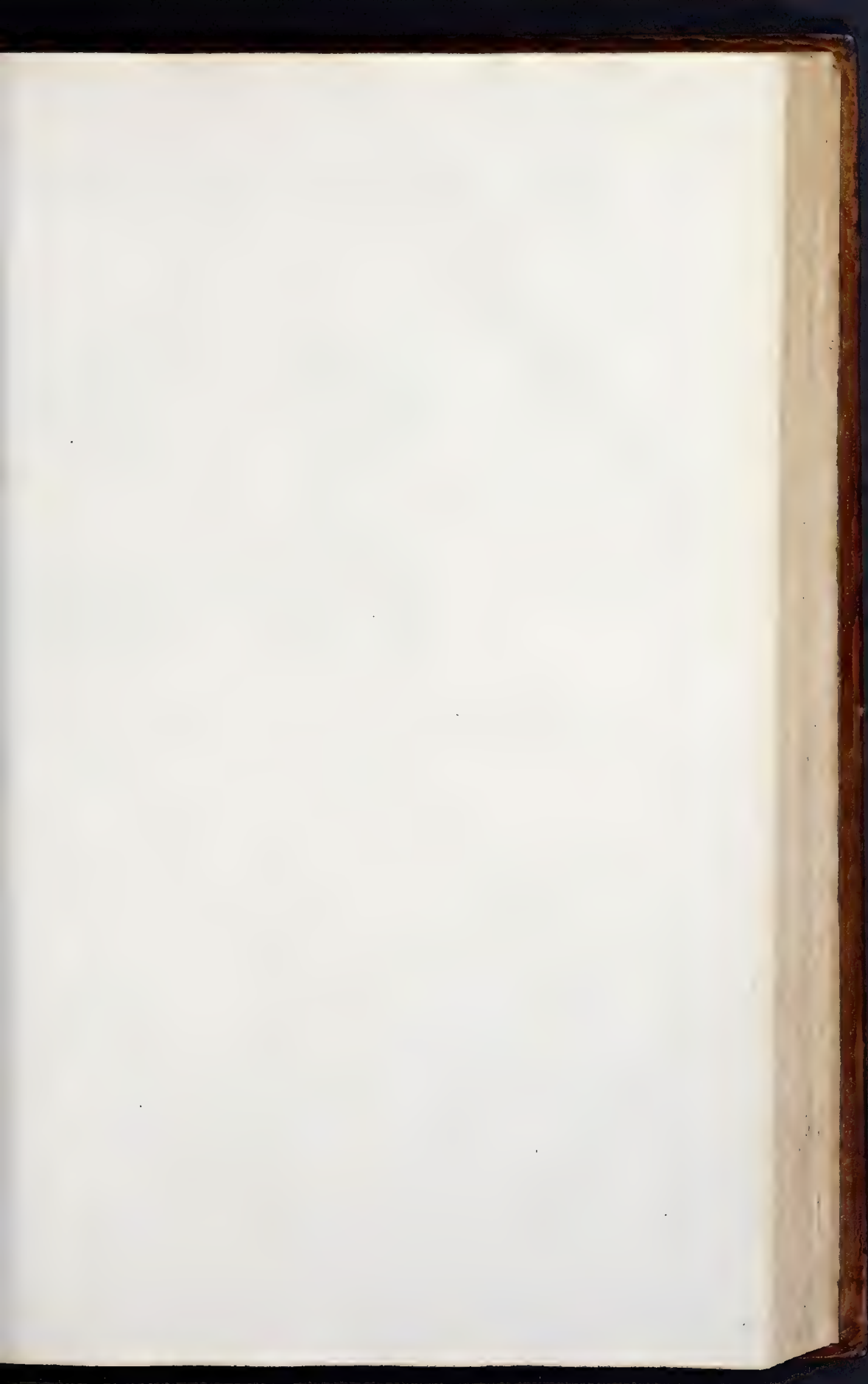


FIG. XL.

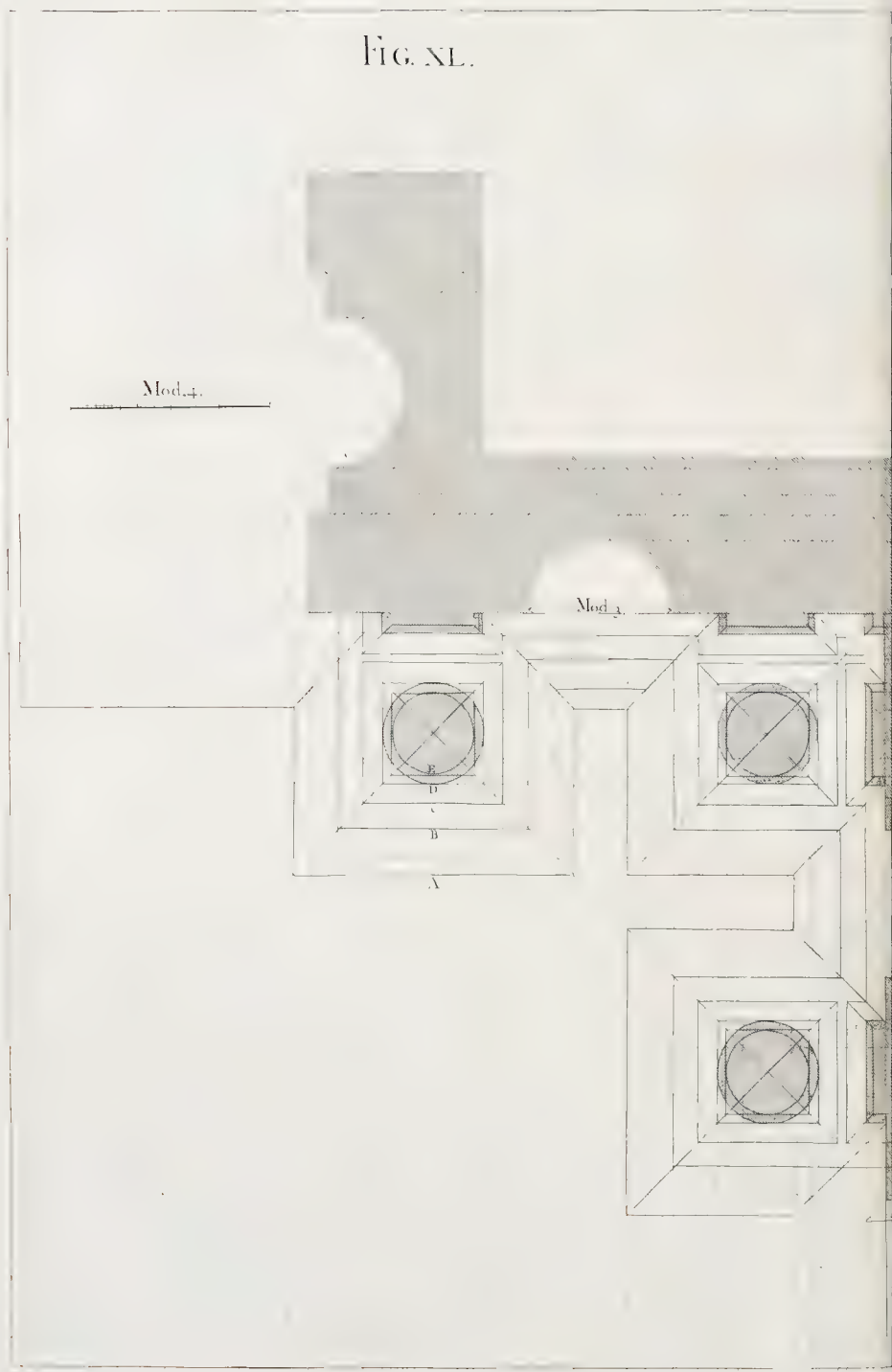


FIGURA QUADRAGESIMA.

Vestigium geometricum ædificii Ordinis
Dorici.



T studiosorum, qui sedulo se exercuerint in pra-
xibus hucusque traditis, & ad majora inbient,
utilitati serviam, delineandam suscepi medie-
tatem arcûs cum tribus columnis, ac totidem
statuarum loculamentis. Ad vitandam autem
confusionem, ea dumtaxat membra in vestigio
adumbrantur, quæ recensuimus figurâ trigesimaoctavâ, & osten-
dunt characteres A, B, C, D, E.

The FORTIETH FIGURE.

*The Geometrical Plan of a Design, of the
Dorick Order.*



OR the Benefit of the Studios, who, ha-
ving reduc'd to Practice the Rules hither-
to laid down, aim at yet greater Things;
I have here undertaken to delineate half
an Arch adorn'd with three Columns, and
as many Niches for Statues. But to a-
void Confusion, I have given full Lines to those Members
only, which were mention'd in the Thirty-eighth Figure,
and which are here denoted by the Characters A, B, C, D, E.

FIGURA Quadragesimaprima.

Elevatio geometrica ædificii Dorici.



X vestigio geometrico eruitur hæc elevatio geometrica longitudinis ædificii nostri. Et iccirco figura ista quadragesimaprima, cujus mensuræ omnes desumptæ sunt ex Barozzio, congruit longitudini figuræ quadragesimæ.

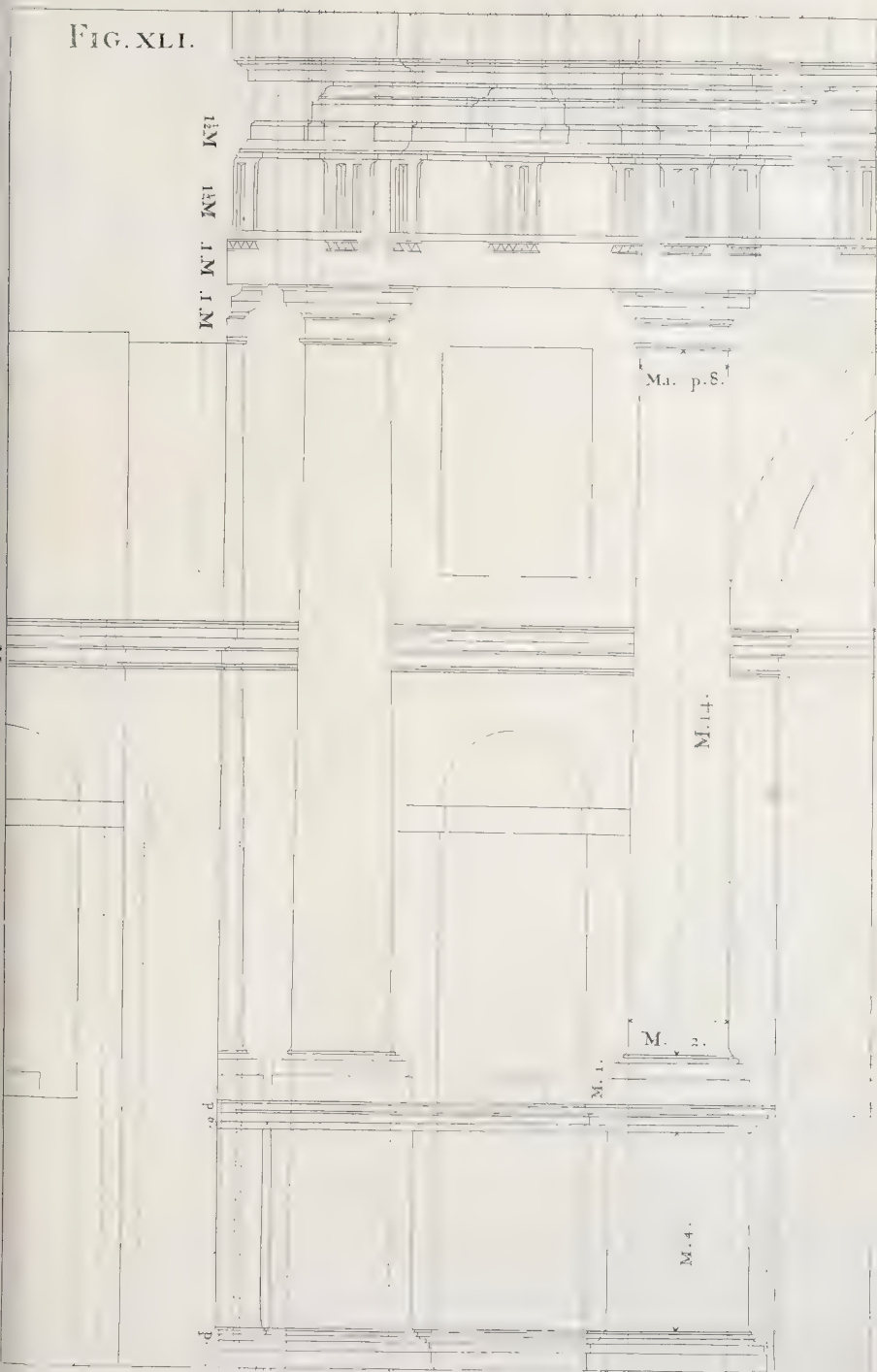
The Forty-first FIGURE.

The Geometrical Elevation of the foregoing Design.



HIS Upright is drawn from the foregoing Geometrical Plan; and therefore all the Parts of this Design, whose Measures are taken from *Vignola*, exactly answer those of the Fortieth Figure.

FIG. XLI.



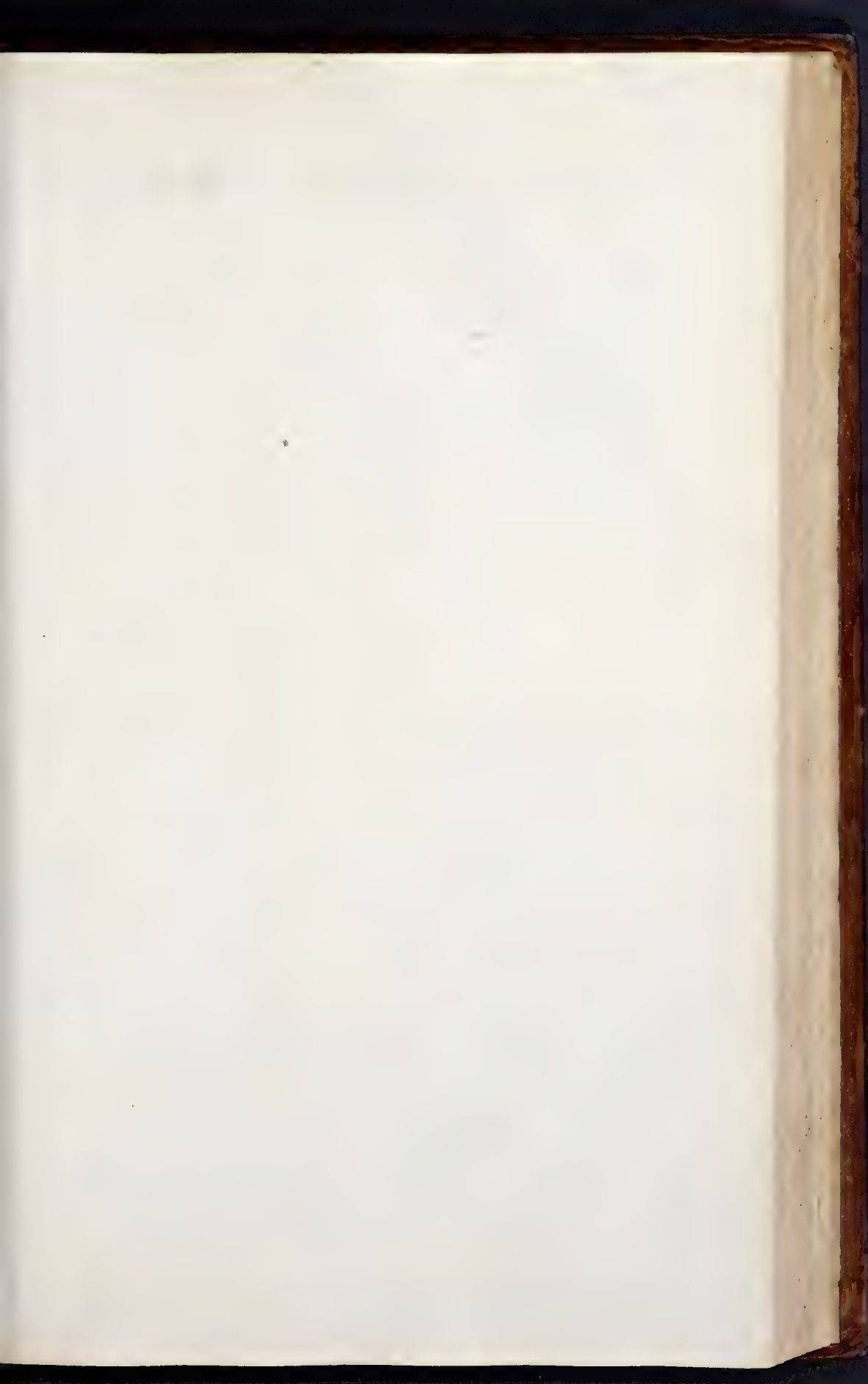


FIG. XLII



FIGURA Quadragesima secunda.

Modus vitandi confusionem, in contractione vestigiorum, & elevationum.



CONTRACTIONES vestigii figurae quadragessimae, & elevationis figurae quadragesimae primae, ob nimiam obliquitatem quam habent, valde confusae sunt. Medebimur tamen incommodo isti, uti fecimus figuris decimâ & undecimâ. Et ostendit chartula, exhibens in parvo tum figuram hanc quadragesimam secundam, tum quatuor sequentes.

The Forty-second FIGURE.

The Manner of avoiding Confusion, in reducing Plans and Elevations into Perspective.



HE Reducing into Perspective the Plan of the Fortieth Figure, and the Upright of the Forty-first Figure, would become very confus'd, through the great Obliquity of the Rays: We have therefore remedy'd the Inconveniences of both, by the Methods explain'd in the Tenth and Eleventh Figures. And this Plate contains in little, what is more at large describ'd in Parts, as well in this, as the four subsequent Figures.

FIGURA Quadragesimatertia.

Contractio vestigii figuræ quadragesimæ.



INEA plani multò remotior est à lineâ horizontali in hoc schemate, quàm in præcedenti. Ideo istud vestigium vacat omni confusione. Cætera patent ex iis quæ sæpius dicta sunt, & ex figuræ hujus inspectione. Oportet autem, rectas parallelas ad lineam plani, prolongari usque ad visuale **TO**, (quæ cadit extra paginam) ut ad miniculo parallelarum, fiat elevatio longitudinis nostri ædificii, de quâ dicemus figurâ quadragesimaquartâ.

The Forty-third FIGURE.

The Plan of the Fortieth Figure in Perspective.



BY placing the Ground-line in this, much more remote from the Horizontal, than it is in the foregoing Figure, all Confusion is here avoided. The rest is evident from what has been often said on this Head, and a bare Inspection of the Figure. Parallels to the Ground-line must nevertheless be continued to the Visual **TO**, which falls without this Page; than from them may be raisd the Elevation of the Length of this Design, which we shall handle in the next Figure.

FIG. XLIII

T

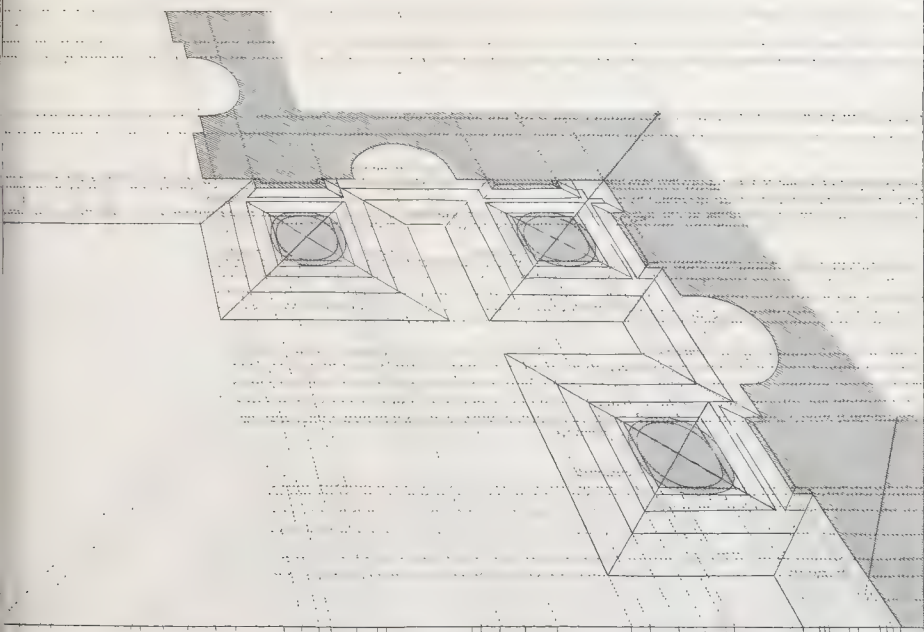




FIG. XLIV.

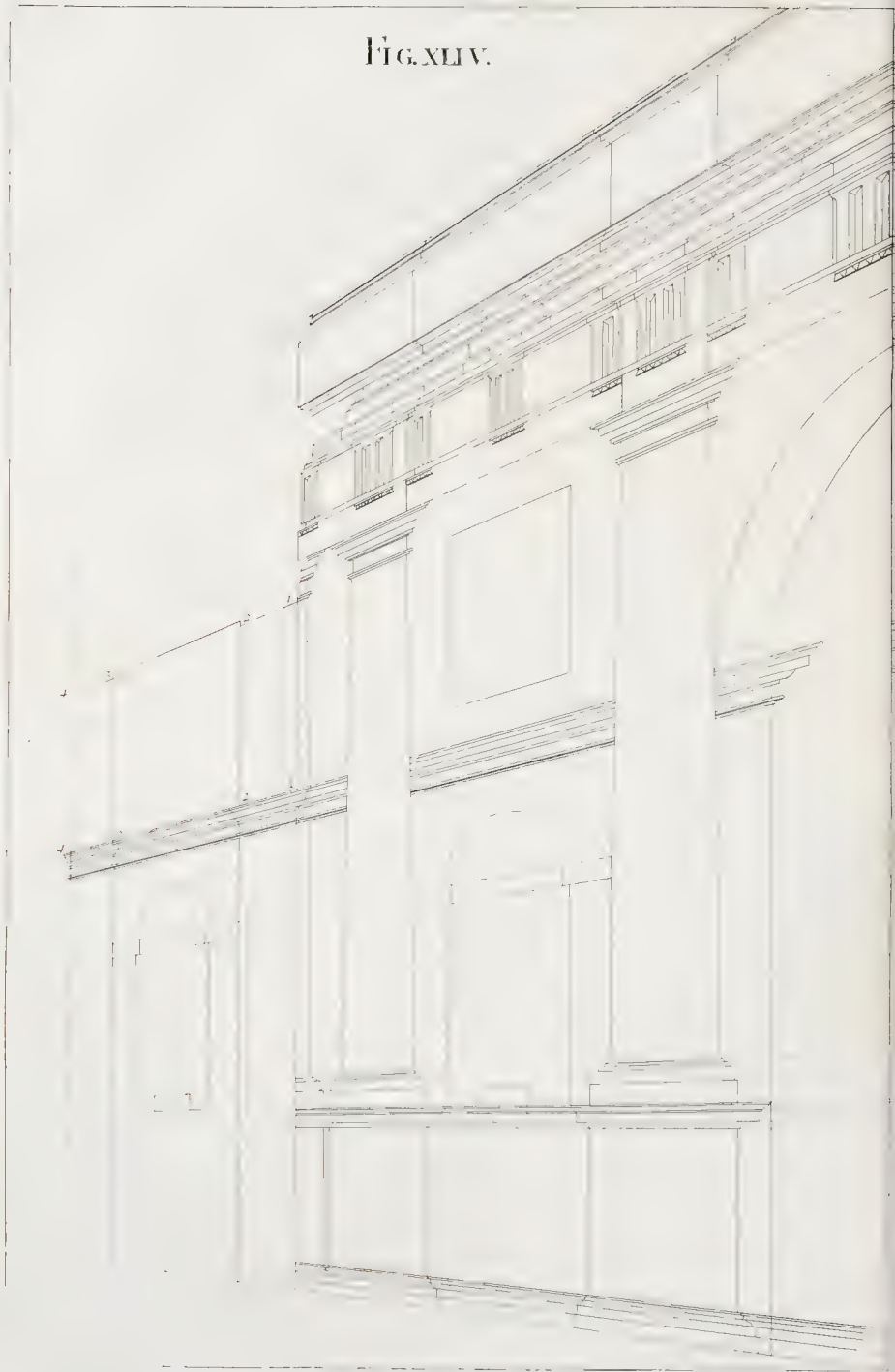


FIGURA Quadragesimaquarta.

Contractio elevationis figuræ quadragesimæprimæ.



ECTÆ parallele ad lineam plani figuræ quadragesimætertiae, ubi pervenerint ad visualet TO, continuandæ sunt, more solito, cum parallelis ad lineam perpendicularem. In hanc autem transferre oportet omnes divisiones, quas ex Barozzio habet elevatio hujus ordinis; ac ducere visuales. Quomodo autem, ad miniculo visualium & parallelarum, compleatur elevatio, constat ex figura, & clarius ex chartula figuræ quadragesimæsecundæ. Numeri 1, 2, 3, 4, geminati, ostendunt centra & altitudines semicircularum seu arcuum figuræ quadragesimæquintæ; videlicet, numerus inferior designat centrum, superior verò designat altitudinem semicirculi.

The Forty-fourth FIGURE.

The Elevation of the Forty-first Figure in Perspective.



HEN the Parallels to the Ground-line in the Forty-third Figure, are prolonged to the Visual TO, they are then, as usual, to be continu'd Parallels to the Perpendicular: On which Perpendicular, those Divisions given by *Vignola*, for the Proportions of this Order, are to be transfer'd; and Visuals drawn from them to the Point of Sight. How by these Visuals and Parallels the Elevation is rais'd in Perspective, is manifest in part from this Figure, but more clearly from the Forty-second Figure. The Numbers 1, 2, 3, 4, which you here see doubl'd, give the Centers

and Heights of Semicircles of the Arches in the Forty-fifth Figure; the lower Numbers denoting the Centers, and the upper Numbers the Heights of the Semicircles of the same.

FIGURA Quadragesimaquinta.

Dimidium ædificii Dorici opticè deformati.



UIC figuræ delineandæ plures præiverunt, ejusdemque latitudines mutuati sumus ex figurâ quadragesimatertia, altitudines ex quadragesimaquarta. Superest autem, ut lumina & umbræ scitè inducantur in singulas partes ædificii.

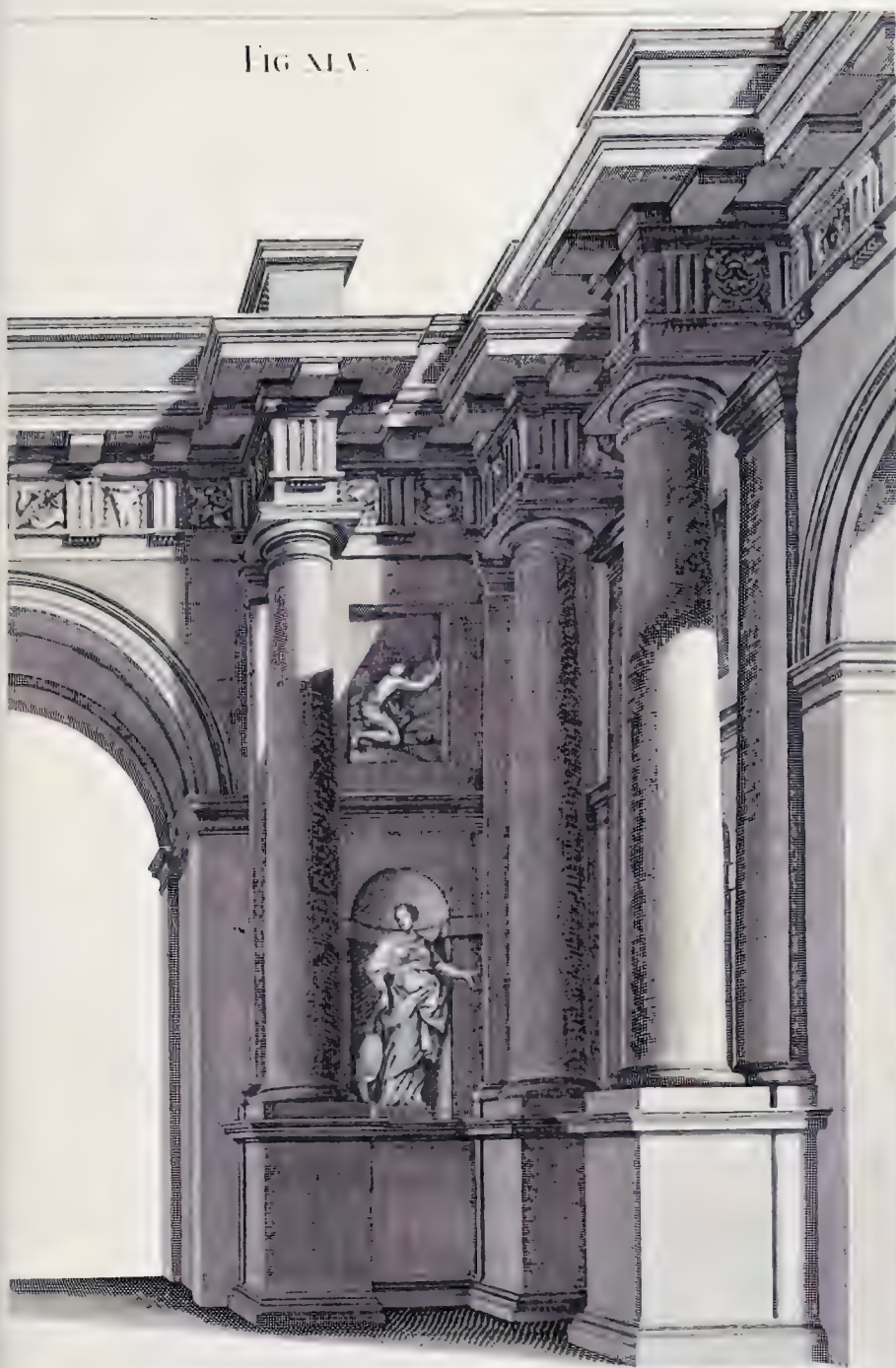
The Forty-fifth FIGURE.

One Half of the Dorick Design in Perspective.



THE foregoing Figures being preparatory to this, the Breadths are taken from the Forty-third, and the Heights from the Forty-fourth Figure. It only remains, that the Lights and Shades be skilfully disposd to each Part of the Work.

FIG. XLV.



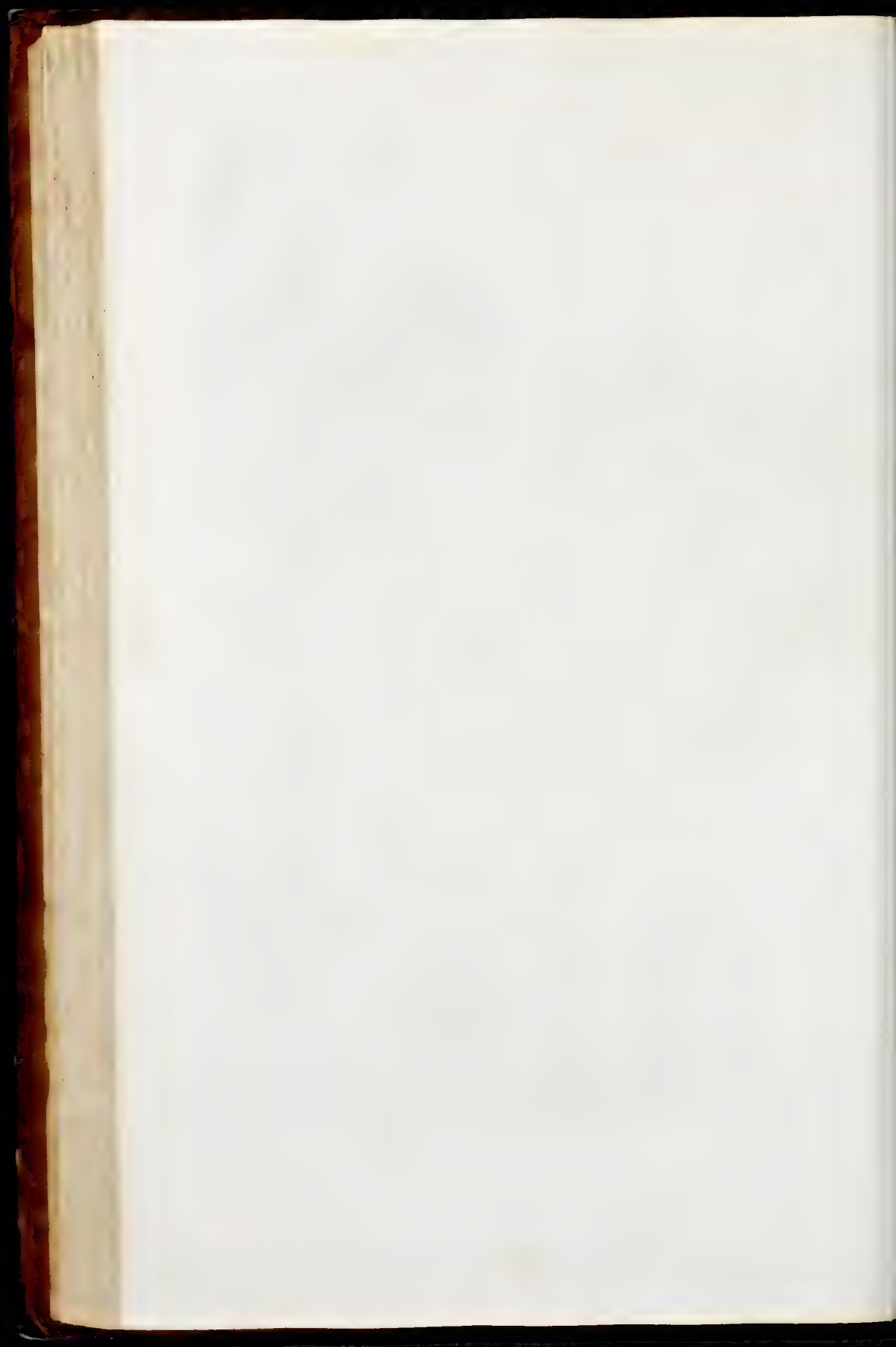




FIG: XLVI.



FIGURA Quadragesima sexta.

Alterum dimidium ejusdem ædificii.



UPERSEDERE poteram delineatione alterius medietatis ædificii nostri. Verùm operæ non peperci, ut ostenderem diversitatem luminum & umbrarum, quæ conveniunt partibus cæteroqui omnino similibus.

The Forty-sixth FIGURE.

The other Half of the same Design.



Might very well have omitted this Half of the Design, but that I spar'd no Pains, to shew the Diversity of the Lights and Shadows, that must be given to those Parts of the Work, which in other Respects are alike.

FIGURA Quadragesima septima.

Vestigia ædificii Ionici.



ESTIGIUM geometricum A ædificii Ionici, sub se habet suam deformationem B. Hæc autem ut evadat distinctior, lineam plani, quæ in sequentibus figuris habebit distantiam PE ab horizontali OE, deorsum protraximus in CD, ut etiam fecimus figurâ quadragesimâ secundâ & quadragesimâ tertîâ. Linea visualis OM eundem habet usum, quem visualis OT figuræ quadragesimæ tertîæ; videlicet, ut in ea terminentur parallele ad lineam plani ex membris vestigiî B, eademque continuentur cum aliis parallelis ad rectam EC, pro deformandâ elevatione quam apponemus figurâ quadragesi-
nonâ.

The Forty-seventh FIGURE.

The Plan of an Ionick Building.



THE Geometrical Plan of this *Ionick* Work is A, underneath is its Perspective B; to render which more distinct, the Ground-line that in the following Figures has only the Distance PE from the Horizontal EO, is here remov'd downward to CD, as was done in the Forty-second and Forty-third Figures foregoing. The visual Line OM is of the same use as that of OT in the Forty-third Figure; namely, to terminate the Lines which are drawn from the Members of the Plan B parallel to the Ground-line; from whence they are again continu'd parallel to the Perpendicular EC, for making in Perspective the Elevation inserted in the Forty-ninth Figure.

The Horizontal line
The Distance is 16 Modules without the line E.C.

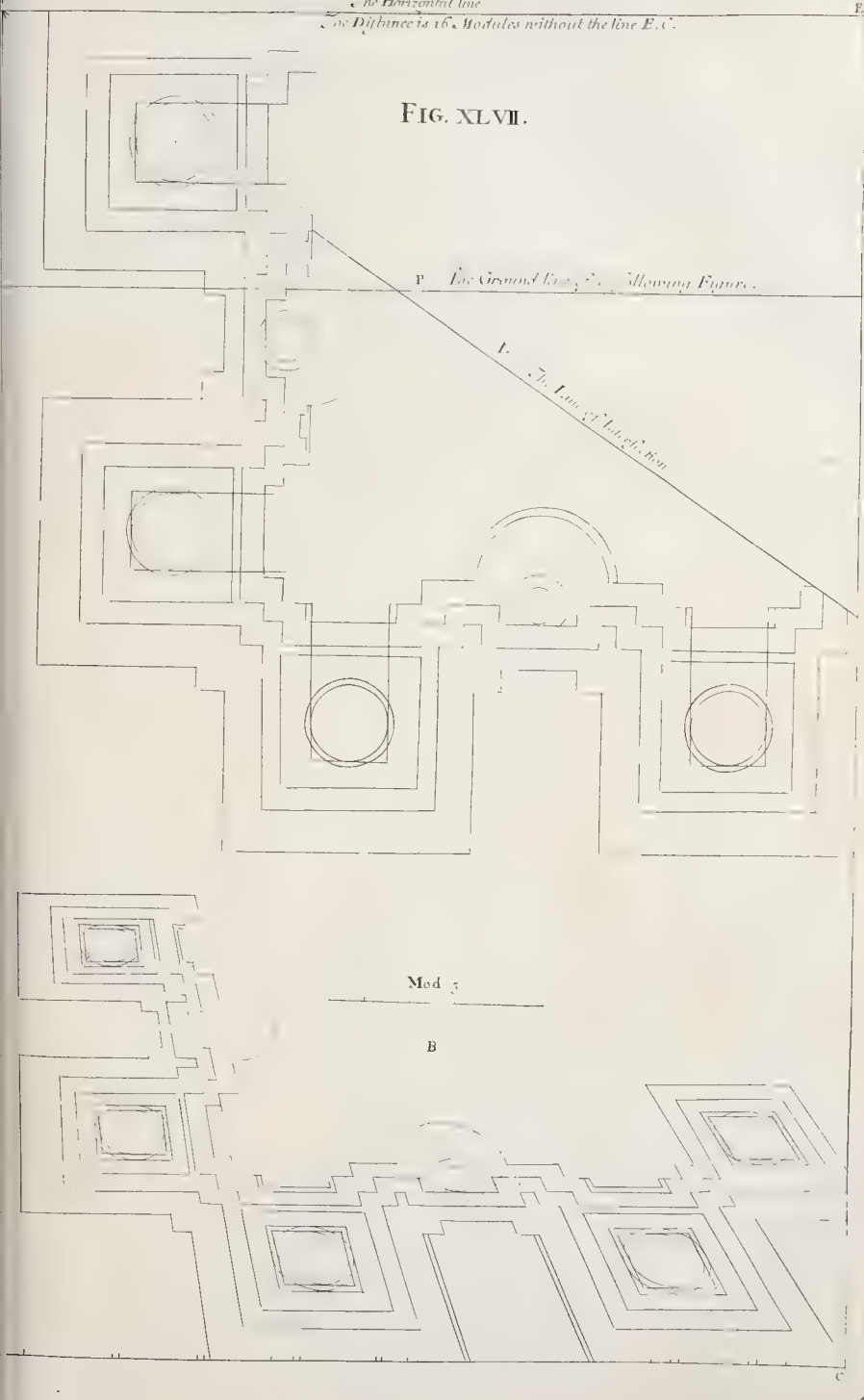
FIG. XLVII.

P The Ground Line, &c. following Figure.

L The Line of Inclination

Mod 5

B



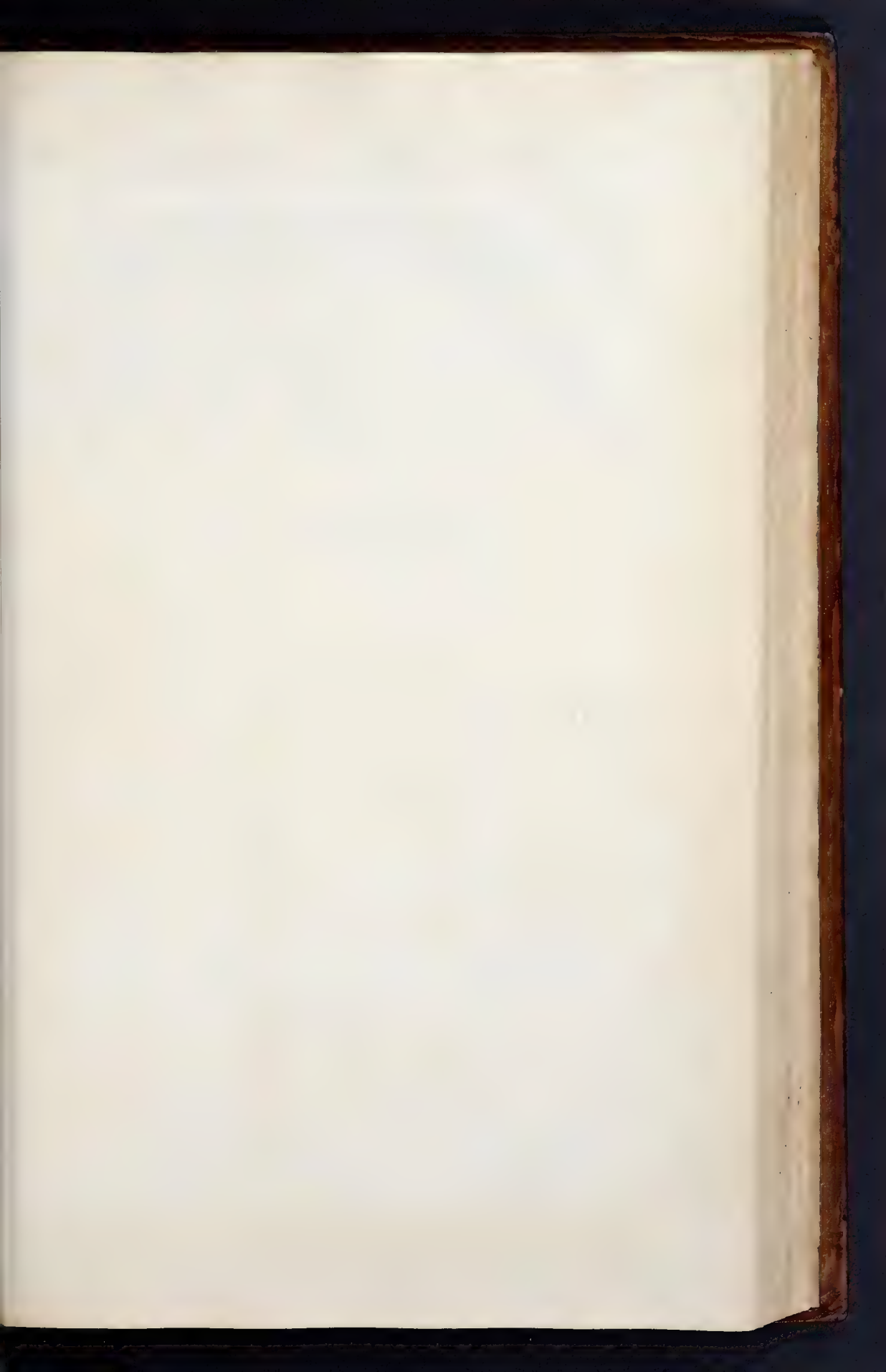


FIG. XLVIII



FIGURA Quadragesima octava.

Elevatio geometrica ædificii Ionici.



X hac elevatione quæ clarè ostendit membra totius ædificii secundum longitudinem dissecti, desumuntur altitudines ac terminationes membrorum singulorum. Peritiores tamen hac figurâ delineandâ supersedere solent, quia terminationes haberi possunt ex vestigio A figuræ quadragesimæ septimæ, altitudines verò ponendæ iterum sunt figurâ sequenti.

The Forty-eighth FIGURE.

The Geometrical Upright of the foregoing Ionick Design.



FROM this Figure (which distinctly shews the Composition of the whole Work, in respect of its Length) are taken the Heights and Terminations of the several Members thereof. But those that are skill'd in this Art, usually omit the delineating these Elevations; because the Terminations may be taken from the Plan A in the Forty-seventh Figure; and the Heights must be repeated in the following Figure.

FIGURA Quadragesima nona.

Deformatio elevationis ædificii Ionici.



ÆC figura continens deformationem præcedentis elevationis, perficitur methodo illa, quam ostendimus figurâ quadragesima secundâ; nimirum, ex vestigio B figuræ quadragesima septimæ, ducere oportet parallelas ad lineam plani CD, quæ ubi pervenerint ad visualem OM, continuanda sunt cum aliis parallelis ad lineam EC. Easdem parallelas in hanc figuram translatas secant visuales ex linea recta AB, in qua posita sunt altitudines ædificii Ionici, desumpta vel ex figura præcedenti, vel ex Barozzio. Nullum autem est punctum in membris hujus elevationis, quod non inveniatur per sectiones visuales ex linea AB, cum parallelis ad eandem lineam.

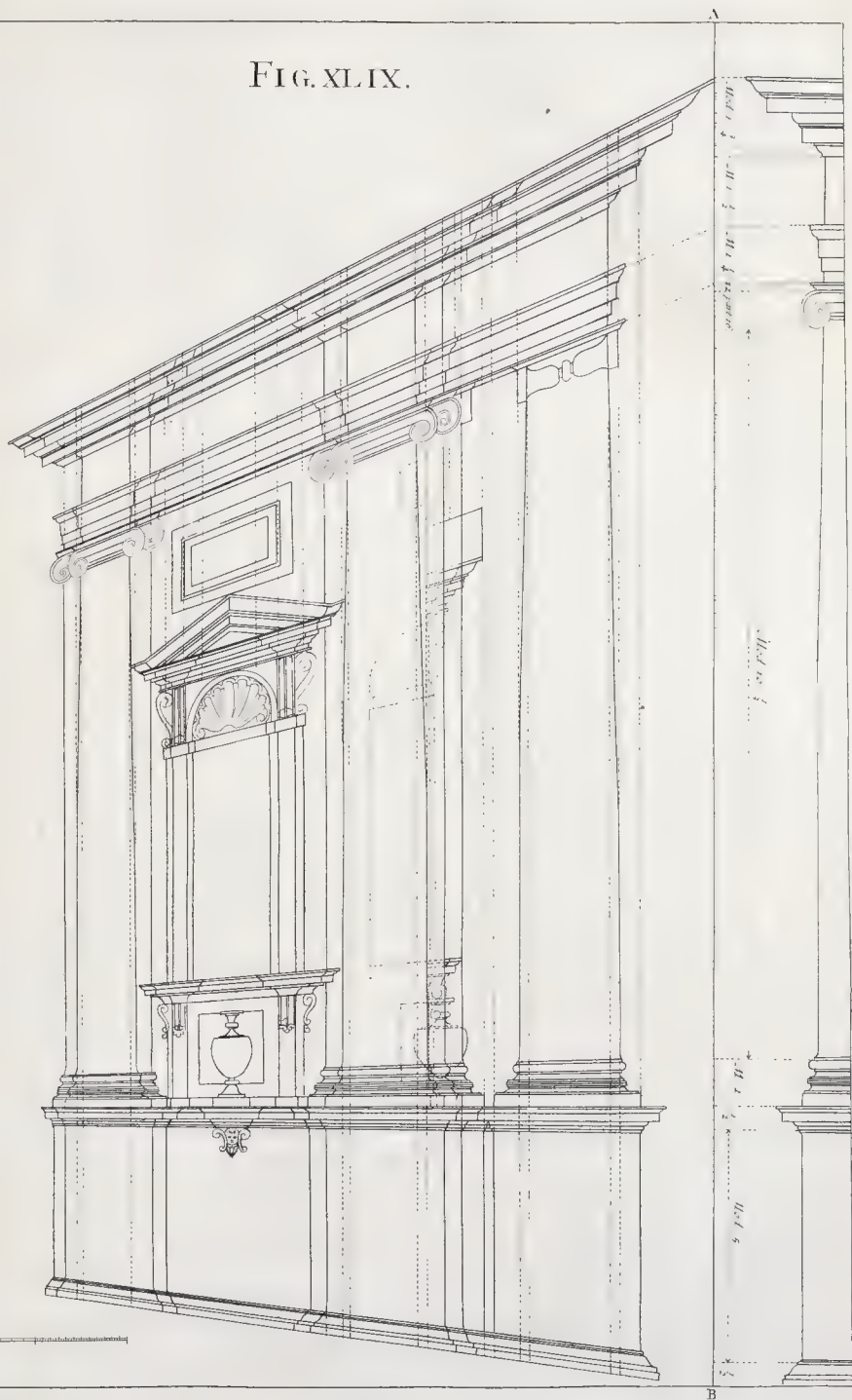
The Forty-ninth FIGURE.

The Elevation of the Ionick Design in Perspective.



HIS Plate containing the Perspective of the foregoing Upright, is drawn by the Method laid down in the Forty-second Figure; to wit, from the Plan B of the Forty-seventh Figure, Parallels to the Ground-line CD are prolong'd to the Visual OM; and thence are continu'd Parallels to the Perpendicular EC. These being transferr'd into this Figure, are intersected by the visual Lines that proceed from AB, which contains the Heights of this Ionick Composition, agreeable to the foregoing Figure, and the Rules deliver'd by Vignola. Now there is no Point in any Member of this Upright, but may be found by the Intersection which the visual Line from AB makes with its respective Perpendicular.

FIG. XLIX.



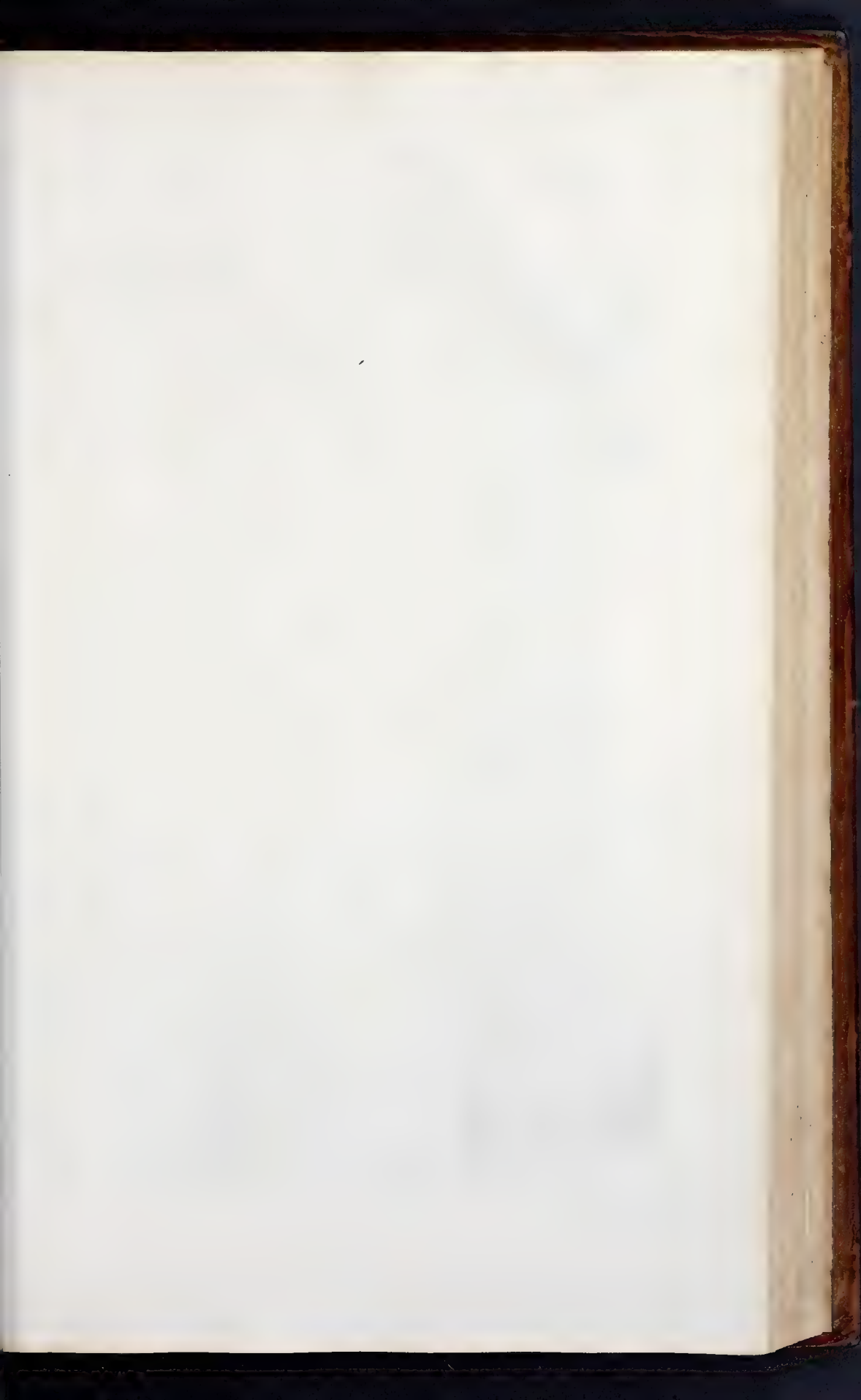


FIG 1.

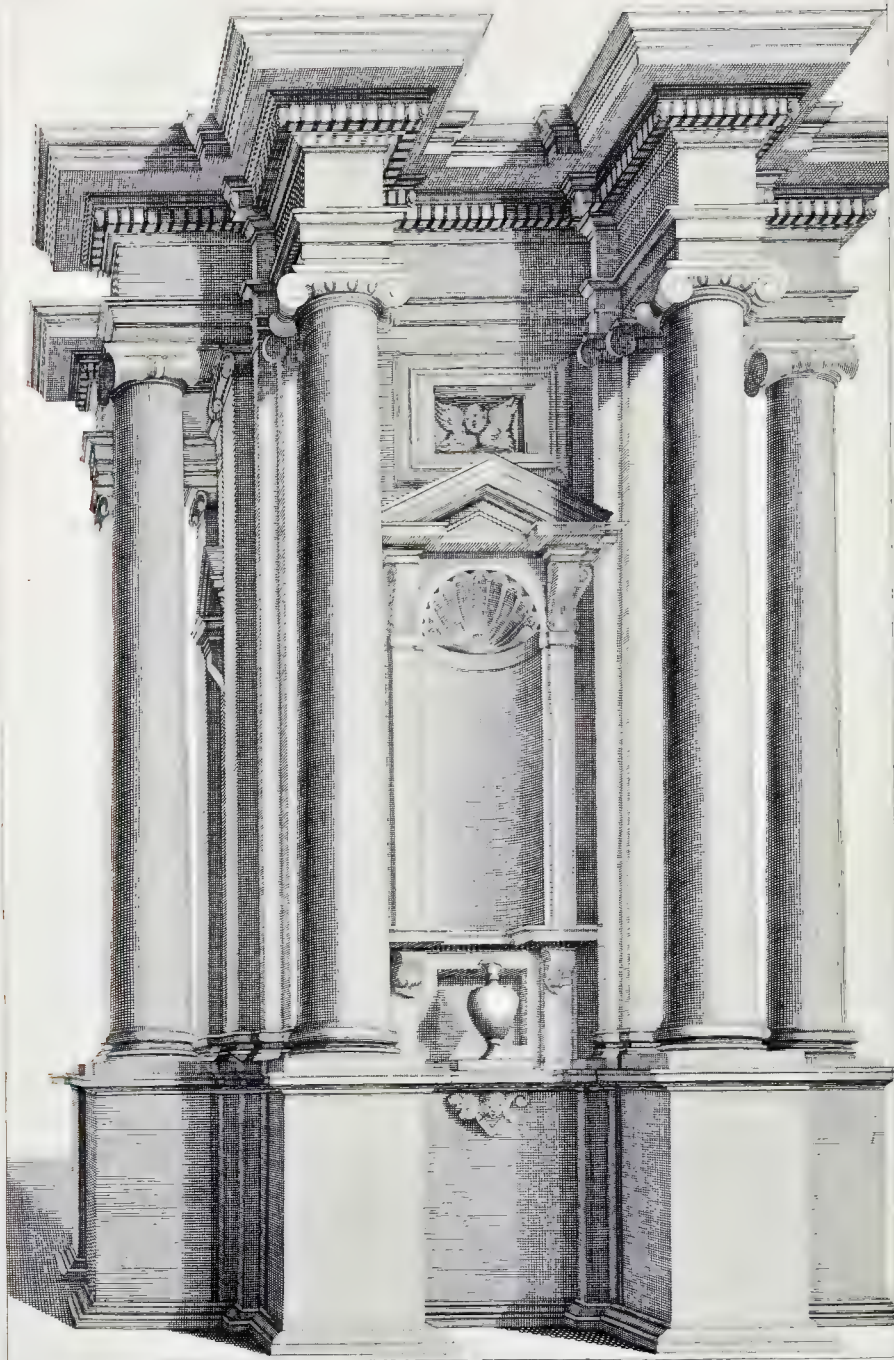


FIGURA Quinquagesima.

Architectura Ionica.



X vestigio figuræ quadragesimæseptimæ, & ex elevatione figuræ quadragesimænonæ, eruitur hoc ædificium Ionicum, quod esse poterit vel principium alicujus turris campanariæ, aut basis cujuspiam arcûs triumphalis. Vereor ut calculator suam diligentiam in hoc schemate satis probaverit. Ejus tamen errata faciliè ipse deteges, & omni studio cavebis.

The Fiftieth FIGURE.

A Design of Ionick Architecture.



FROM the Plan of the Forty-seventh Figure, and from the Upright of the Forty-ninth Figure, is drawn this *Ionick* Piece; which might well serve for the lower Order of a Turret, or for part of a Triumphal-Arch. I fear the Engraver has not been so exact in this Scheme, as he ought; but you will readily discover his Mistakes, and carefully beware of them.

FIGURA Quinquagesimaprima.

Ordo Corinthius.



OMPLECTITUR hæc pagina molem contrā-
ctam Ordinis Corinthii, cum suis præparatio-
nibus. Vestigium A exhibet parietem pone co-
lumnas cavum instar canalis. Idem vestigium
optice deformatur in D: omiſſâque elevatione
geometricâ, per ejus altitudines notatas in li-
neâ BC projicitur elevatio; ac methodo consueta, ex vestigio &
elevatione componitur ædificium, addito statue unius ornamento.

The Fifty-first FIGURE.

A Corinthian Design in Perspective.



HIS Plate contains the Perspective of a
Corinthian Work, with its Preparations.
The Geometrical Plan A shews the Wall
wrought hollow behind the Columns.
The said Plan in Perspective is D: and
leaving out the Geometrical Elevation,
the Perspective thereof is describ'd, by transferring the
Heights of the former into the Line BC. From the
Perspective-Plan and Upright the Design is finish'd after
the usual Manner; to which is added the Ornament of a
single Statue.

FIG. LI.





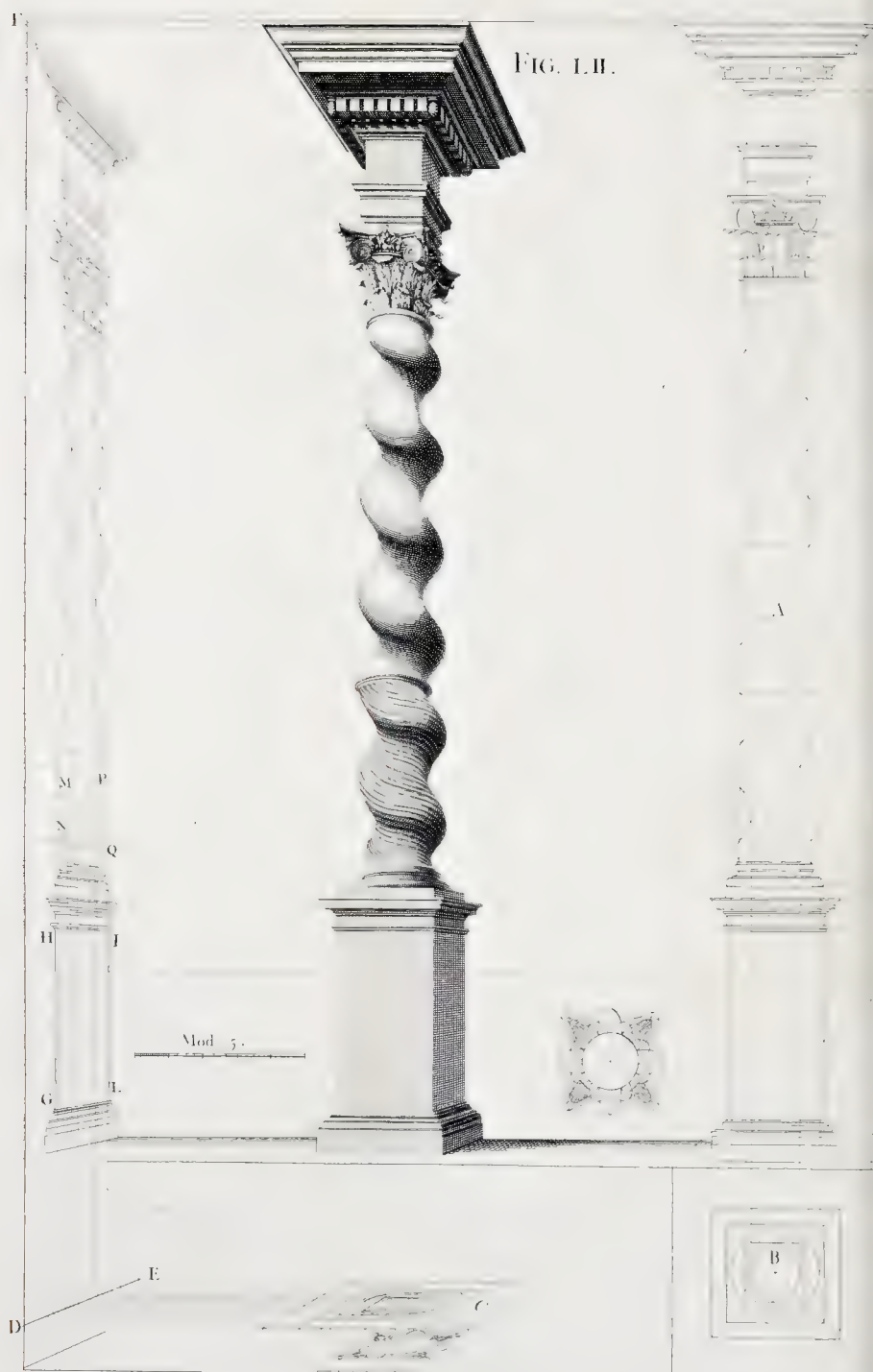


Figura Quinquagesimasecunda.

Delineatio columnæ spiralis, Ordinis Compositi.



OSITA elevatione geometrica columnæ rectæ, ac divisione illius in vigintiquatuor partes æquales, columna spiralis absolvitur per partes circumferentiæ circulorum, quorum diametri sunt æquales diversis latitudinibus columnæ rectæ, ut ostendit figura in A. Ad projectionem opticam elevationis, notandæ sunt quatuor occultæ rectæ, quæ ex terminis convexitatis & concavitatis infimarum spirarum ejusdem elevationis A, descendunt ac desinunt in duos circulos vestigii geometrici B. Vestigium ipsum optice imminutum habetur in C: eadem autem sunt maximæ hinc inde latitudines, tum in circulo majori, tum in convexitate infimarum columnæ spirarum; eadem sunt maximæ latitudines, tum in circulo minori, tum in concavitate ipsarum spirarum; ut dignosces applicando regulam spiræ simul & circulis. Ex quatuor punctis maximæ latitudinis duorum circulorum, incipiunt quatuor lineæ parallele ad lineam plani, quæ ubi pervenerint ad visualement ED, continuandæ sunt cum parallelis ad perpendicularum DE. In eadem lineam DE, ex elevatione A transferre oportet vigintiquatuor partes æquales altitudinis columnæ, ac ducere visuales ad O punctum oculi. Per sectionem autem visualium cum prædictis quatuor parallelis ad lineam DE, ducuntur lineæ undulatæ MN, PQ, ex quibus eruntur lineæ utrinque terminativæ columnæ spiralis nitide. Ex linea verò GH habetur facies anterior stylobatæ, columnæ & coronicis; ex linea IL habetur facies eorum posterior.

The Fifty-second FIGURE.

The Description of a wreath'd Column, of the Composite Order.



AVING made the Geometrical Elevation of a streight Column, and divided the Height of its Shaft into Four and twenty equal Parts; the Wreathing is describ'd by Parts of the Circumference of Circles, whose Diameters are equal to the severall Breadths, or Diameters, of the streight Column; as is shewn in the Figure A. For putting the Upright into Perspective, four streight occult Lines are of use, which descend from the Extent of the Swellings and Sinkings of the lower Wreaths of the Column A; and terminate in two Circles of the Geometrical Plan B.

The said Plan laid down in Perspective is C. The utmost Extent of the greater Circle determines that of the Convex Parts of the lower Wreaths: The greatest Breadth of the lesser Circle gives that of the hollow Parts of the said Wreaths; as may be perceiv'd, by applying a Ruler from the Wreaths to the Circles of the Plan. From the four Points of greatest Breadth in those Circles, four Lines parallel to the Ground-line are continu'd to the Visual ED, and thence again continu'd parallel to the Perpendicular DE. From the Elevation A, the Four and twenty equal Parts of the Columns Height are transferr'd into the Line DE, and Visuals drawn from each to the Point of Sight O. By the Intersections of those Visuals with the four Perpendiculars aforesaid, are drawn the wav'd Lines MN, PQ; from which, both the Out-lines of the finish'd Column are describ'd. But the Fore-part of the Pedestal, Column, and Cornice, is taken from the Line GH; the Back-part of the same from the Line IL.

Fig. Quinquages. tertia A.

Ordines Architecturæ, desumpti ex
Palladio & Scamozzio.



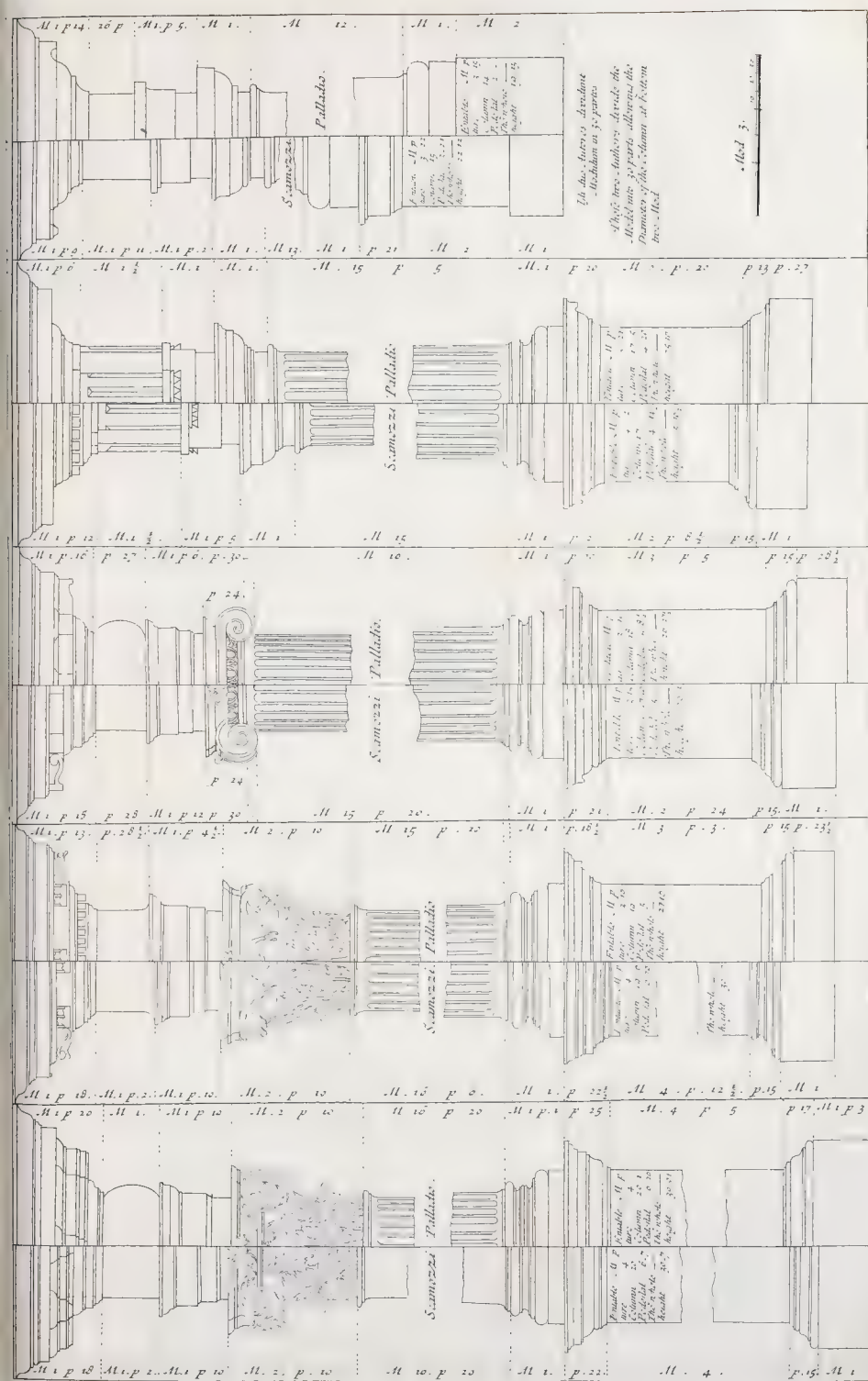
E Ordinibus Architecturæ,
præter Barozzium, egregie
scripserunt Palladius & Scamoz-
zius; ac singuli, jure me-
rito, suos habent assclas &
patronos. Ut ergò, etiam ju-
cta laudatissimorum Auctorum placita, opticas
projectiones facere possis, omnes Ordines in hac
paginâ exhibere volui, ut in eorum Libris in-
veniantur.

The Fifty-third Figure A.

*The Orders of Architecture, taken from
Palladio and Scamozzi.*



*B*ESIDES *Vignola*, *Palladio*
and *Scamozzi* have also
written excellently well
of the Orders of Archi-
tecture; and each of 'em
have deservedly their Fol-
lowers and Admirers. That you might
therefore be enabled to make Designs in
Perspective, after the Proportions of the
most celebrated Masters, I have in this Plate
given you the Measures of all the Orders,
as deliver'd by them in their Books.





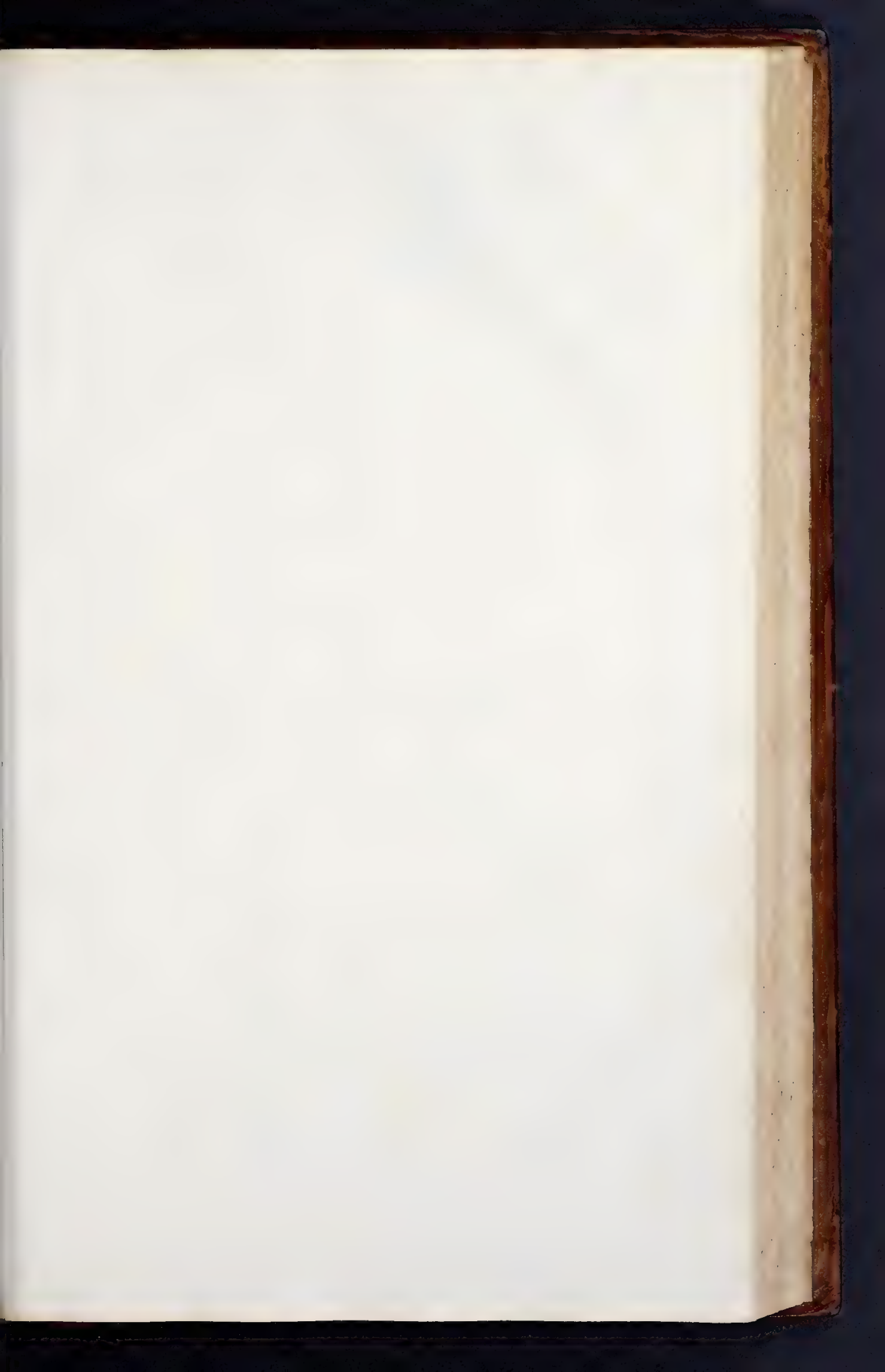


FIG. III. B.

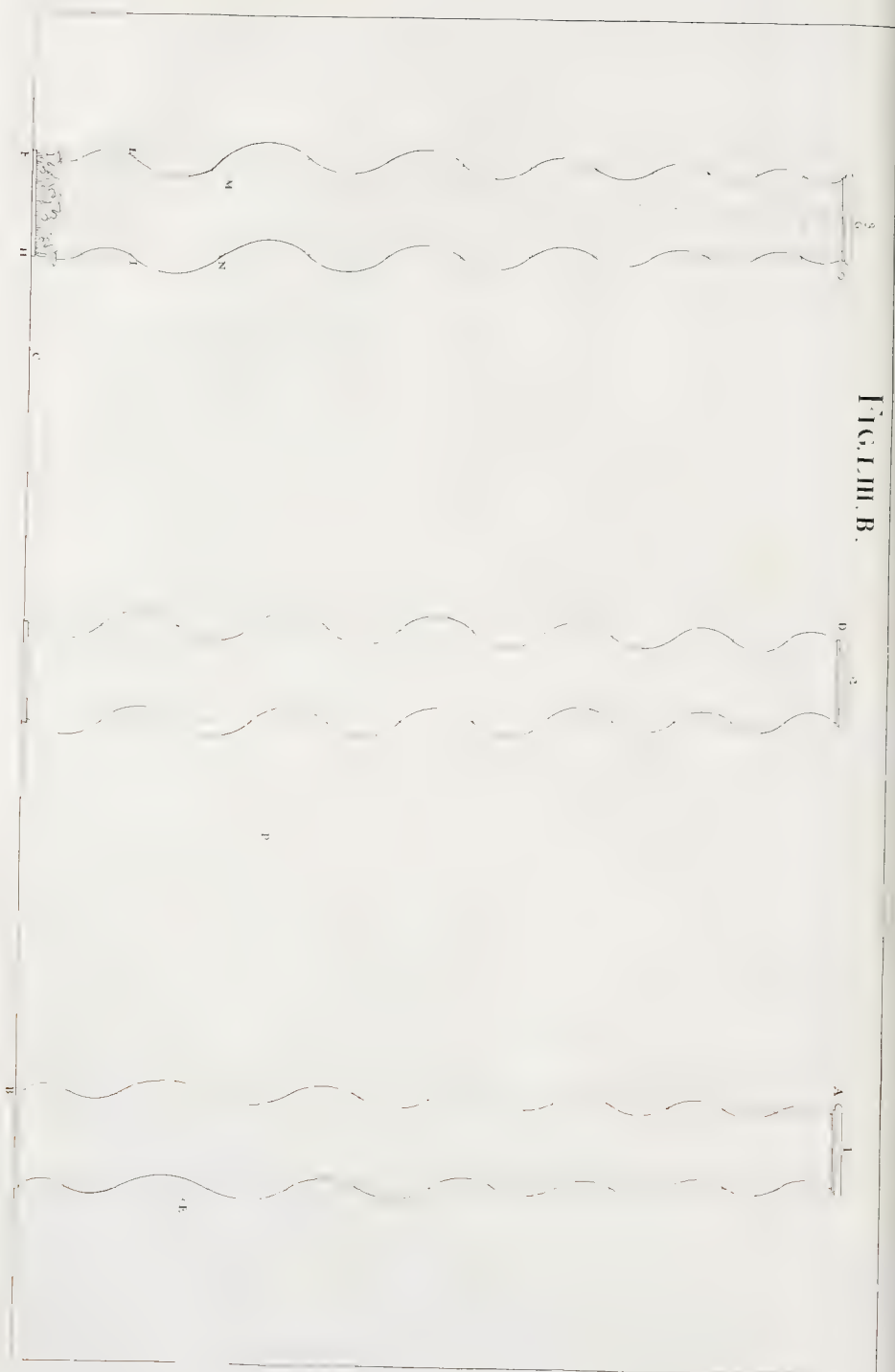
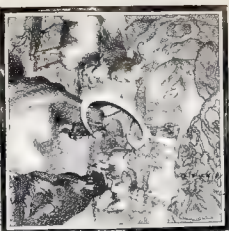


Fig. Quinquagesima tertia B.

Modus triplex delineandi columnas spirales.



OLIMNÆ figura superioris carent ea continuitate, qua prædictæ sunt columnæ spualdes antecessoribus Equitis Bernini ad septentrionem S. Petri in Vaticano. Itaque methodum triplicem exhibeo ad inveniendam spatia totius altitudinis columnæ.

1. *Picta* O A fit equalis altitudini AB columnae. Fuit autem recta OB, & arcus AP ex centro O, divinus in partes duodecim equales, ducento O, divinus in columnam rectam, & ac deinde rectas, quae per puncta divisionum designant in columnam rectam, & ac deinde sunt parallelae ad basin: Spatia inter has parallelas dabant aperturam circum pro triangulis equilateris & pro spatis, ut ostendit columna 1.

2. *Triangula* in *C* tertia parte altitudinis columnae ab ejus imo scapo, ha-
beat circius aperturam CD 3 ac posteo imo ejus crure prius in D , postea in C ,
sunt duo parvi arcus ad E : Jesso illorum arcuum erit centrum arcus DC ,
quem oportet dividere in duodecim partes aequales, & ex partibus divisionum du-
cere parallelas ad basim. Tum spatris inter parallelas divisi in quatuor partes
aequales, tres ex illis partibus dabunt longitudinem curvam pro triangulis jisseli-
bas 3, vertices autem triangulorum erant centra singularium spirarum, ut ostendit
columna 2.

3. Ducta ex medio summitatis G rectâ GF, spatium HE transformat in Δ , ac fuit rectâ IL parallela ad basin HE, spatium IL transformat in Δ , ac fuit NM, φ sic denique: In parvis columnis triangula sine sensibili errore dici possunt per diagonales; in columnis tamen grandioribus, altiorum ex modis antea explicatis adhibere necesse est.

The Fifty-third Figure B.

Three different Ways of delineating wreath'd Columns.



HE wreath'd Columns describ'd in the Fifty second Figure, being divided into Twenty-four equal Parts, want very much of that Elegancy of Contour, which is visible in thole brats Pillars, made by the famous Cavalier *Bormini*, for *S. Peter's* Sepulchre in the *Vaticum*. Wherefore I here lay before you three several Ways of diminishing the Spaces through the whole Height of the Column.

1. Make the right Line O A equal to A B the Height of the Column, then draw the Line O B, and on the Center O describe at pleasure the Arch A P, which divide into twelve equal Parts, and by the Divisions draw straight Lines from the Center O to the Line of the Column; and lastly continue the same Parallels to the Bale. The Spaces between you are Parallels, shall be the Sides of equilateral Triangles, wherewith you are to describe the Wreath of the Column, as is seen in Column 1.

2. Having set the third Part of the Columns Height, from the Bottom of the Shaft to the Point C; with the Interval CD, from the Centers D and G, describe the Parts of Arches intersecting at E. On the Center E, and G, describe the Parts of Arches intersecting at F. On the Center F, with the same Interval, describe the Arch DG, which divide into twelve equal Parts; and from the Points of those Divisions, draw Parallels to the Base. Then dividing each Space between the Parallels into four equal Parts; three of those Parts shall be the Sides of the *Hyfolets* Triangle; whose *Vertex* is the Center whereto to describe each Wreath of Column 2.

3. Having drawn from the middle of the Columns top G, the Line GF, make HI equal to HF, and draw IL parallel to the Base HF: Again, make IN equal to IL, and draw NM also parallel, and to on. In small Pillars, the Centers of the Diagonals of these Spaces may, without sensible Error, serve for describing the Wreaths; but in greater Columns, either of the other two Methods is rather to be chosen.

FIGURA Quinquagesimaquarta.

Vestigia ædificiï Ordinis Corinthiï.



ESCRIP^TURI ædificium Corinthium octangulare, ponimus hic vestigia ue-
nius ex quatuor partibus pilarum, quibus imponetur fornix in modum tholi,
ut constabit in figurâ quinquagesimaoctava. Ad faciliorem descriptionem, in par-
te inferiori pagine posui vestigium geometricum stylobate, in superiori vesti-
gium geometricum coronicis, cum latitudinibus & longitudinibus membrorum
singulorum; ut eas transferendo in lineam plani more consueto, utrumque ve-
stigium optice deformetur. Ad vitandam confusionem, prius notare oportebit
puncta quæ spectant ad membra propinquiora solido parieti, deinde alia.

The Fifty-fourth FIGURE.

The Plan of a Design of the Corinthian Order.

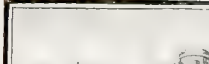
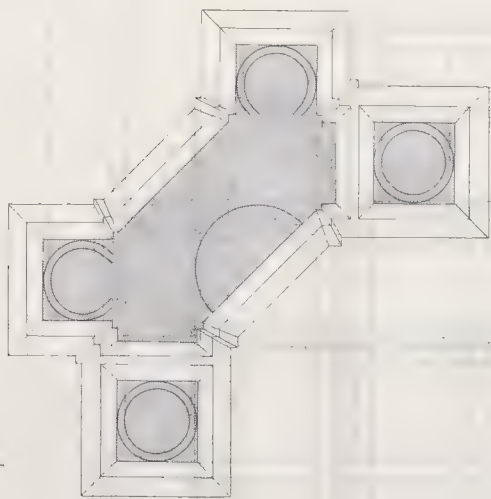
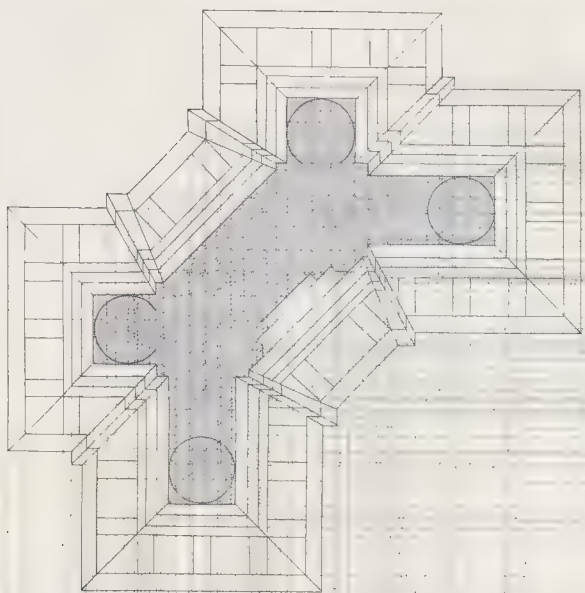


FIG. 58.

FIG. LIV.



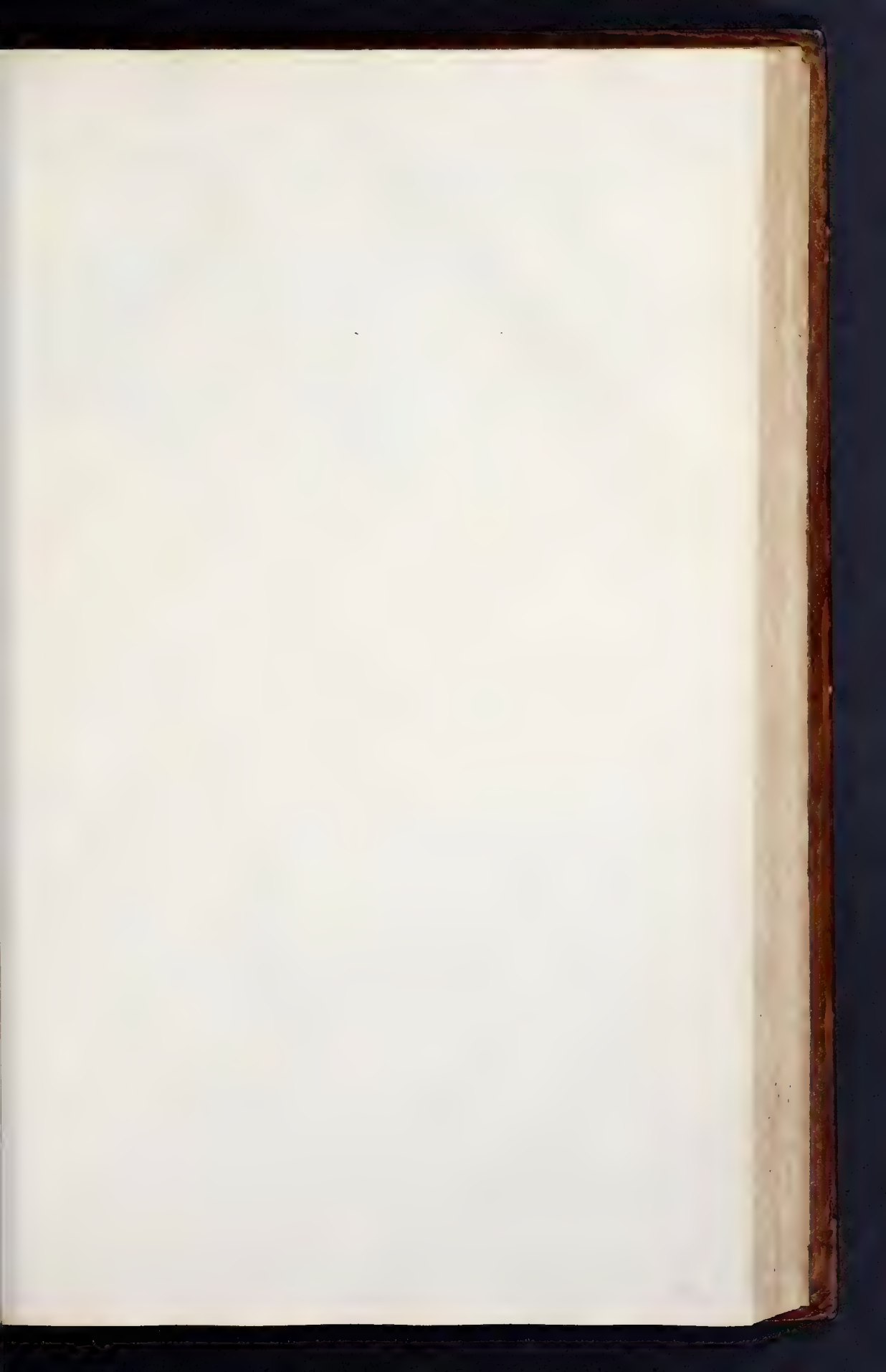


FIG. LV.



FIGURA Quinquagesimaquinta.

Elevatio ædificii Ordinis Corinthii.



LEVATIO geometrica ædificii octangularis congruit cum duobus ejus vestigiis figure antecedentis. Quia verò elevatio parietis abscondit secundam ex quatuor columnis, eademque in ædificio deformato conspicua futura est; ideo eam lineis occultis designare oportuit.

The Fifty-fifth FIGURE.

The Geometrical Elevation of a Corinthian Work.



THE Geometrical Elevation of this Octangular Design, is wholly correspondent to the two Plans of the foregoing Figure: But because the Wall in this Upright takes off the Sight from the second of the four Columns, which is notwithstanding visible in the finish'd Perspective that follows; 'tis requisite to delineate the same with occult Lines, as in the Figure.

FIGURA Quinquagesimasexta.

Deformatio vestigiorum & elevationis ædificii
Corinthii.



N hac figurâ, lineam plani coincidere volui cum linea horizontis. Itaque videri non posset vestigium inferius, nisi ut alias deorsum protraxi lineam plani, hic è converso sursum promovissem lineam horizontis, quam constitui mediam inter lineas plani utriusque vestigii, ut ambæ projectiones essent æquè distinctæ. In elevatione, columna secunda, quam, ut dixi, paries abscondit, lineis occultis designata est.

The Fifty-sixth FIGURE.

The Perspective Plans and Upright of the Corinthian Design foregoing.



N this Figure, I have made the Ground-line coincident with that of the Horizon, in which case the lower Plan can't be seen, unless the Ground-line be sunk lower, as before intimated; or contrariwise, the Point of Sight rais'd higher, as I have here done, keeping it in the midst between the Ground-lines of the two Plans, that the Perspective of both might be equally distinct. In the Elevation, the second Column, which I mention'd to be hidden by the Wall, should be design'd with occult Lines.

FIG. LVI.



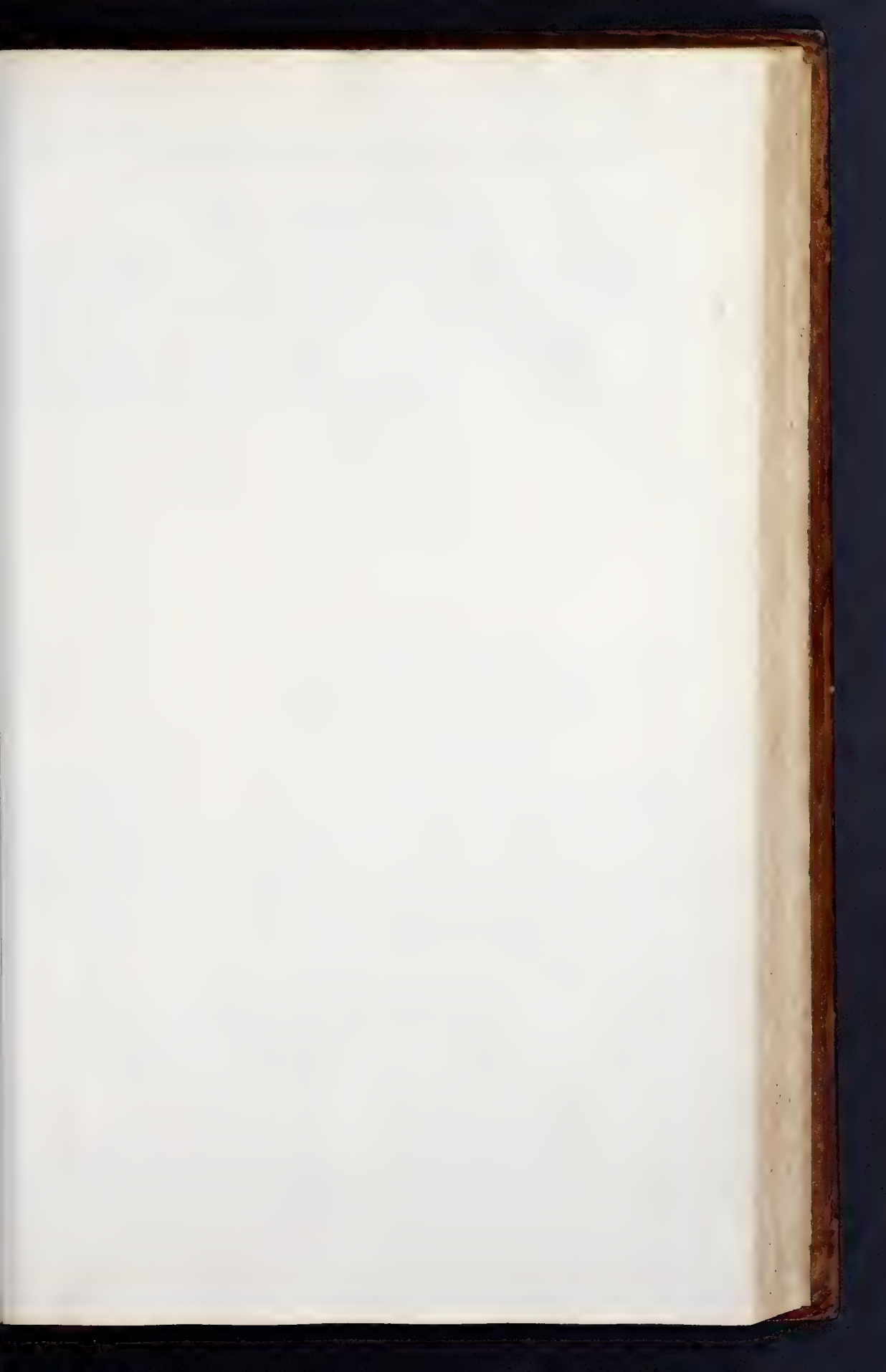


FIG. LVII.

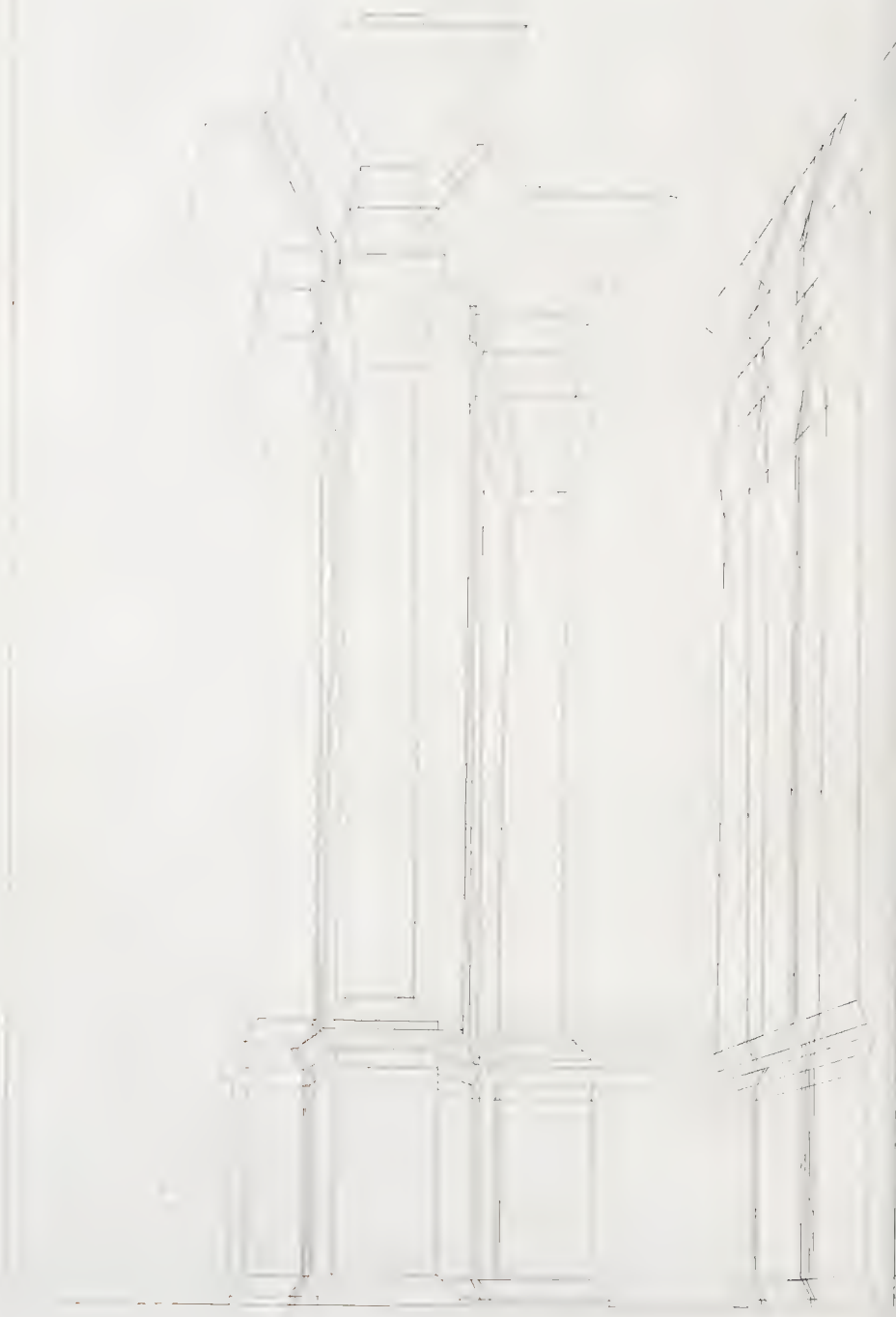


FIGURA Quinquagesima septima.

Adumbratio figuræ sequentis.



FIGURAM hanc seorsim delineavi, ut videas quomodo facienda sit operis totius adumbratio, accipiendo altitudines membrorum singulorum ex elevatione; latitudines & longitudines ex vestigiis. Quæ omnia ex diagrammatis inspectione clarissimè apparent.

The Fifty-seventh FIGURE.

The rough Draught of the following Figure.



Have drawn this Figure apart, that you may see the Manner of describing the Out-line of the whole Work, by taking the Heights of the several Members from the Elevation, and their Breadths and Lengths from the Plans; all which is very plain, upon Inspection of the Figure.

FIGURA Quinquagesima octava

Ædificium Ordinis Corinthii octangulare.



UCUSQUE descripsimus pilas anticas sinistras
ædificii Corinthii. En hoc loco mediætatem
dexteram totius Operis. Integrum verò ædi-
ficium habebis figurâ sexagesimâ.

The Fifty-eighth FIGURE.

Part of an Octangular Work of the Corinthian Order.



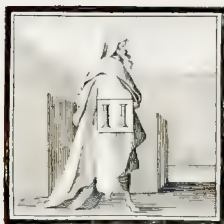
ITHERTO the nearest left-hand Quar-
ter of this *Corinthian* Design has been de-
scrib'd. In this Plate you have the right-
hand Half of the whole Work ; and in the
Sixtieth Figure, the entire Perspective
compleat.

FIG. LVIII.



FIGURA Quinquagesimaoctava

Ædificium Ordinis Corinthii octangulare.



UCUSQUE descripsimus pilas anticas sinistras
ædificii Corinthii. En hoc loco mediætatem
dexteram totius Operis. Integrum verò ædi-
ficiū habebis figurâ sexagesimâ.

The Fifty-eighth FIGURE.

Part of an Octangular Work of the Corinthian Order.



ITHERTO the nearest left-hand Quar-
ter of this *Corinthian* Design has been de-
scrib'd. In this Plate you have the right-
hand Half of the whole Work ; and in the
Sixtieth Figure, the entire Perspective
compleat.

FIG. LVIII.



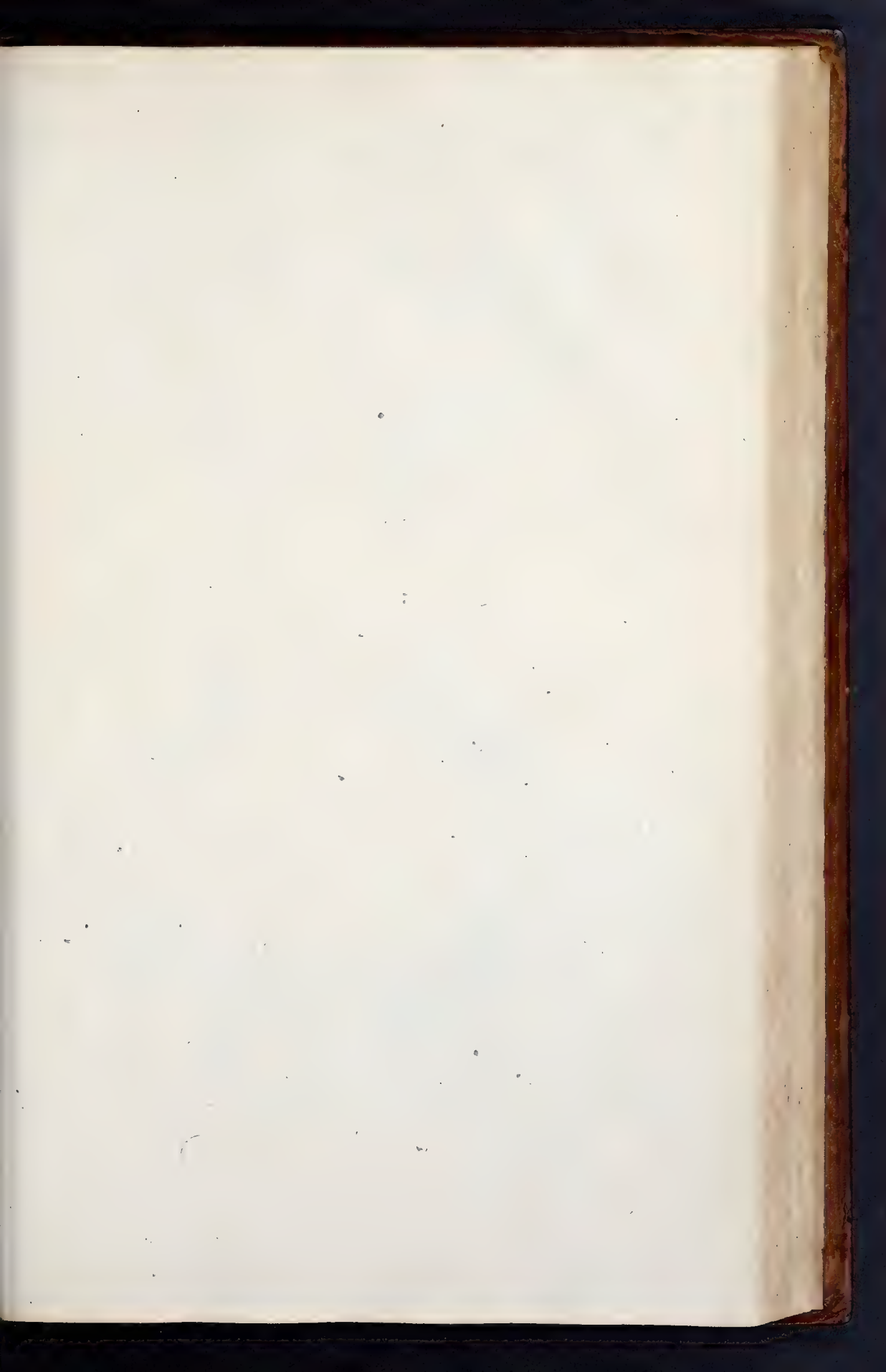


FIG. LIX.

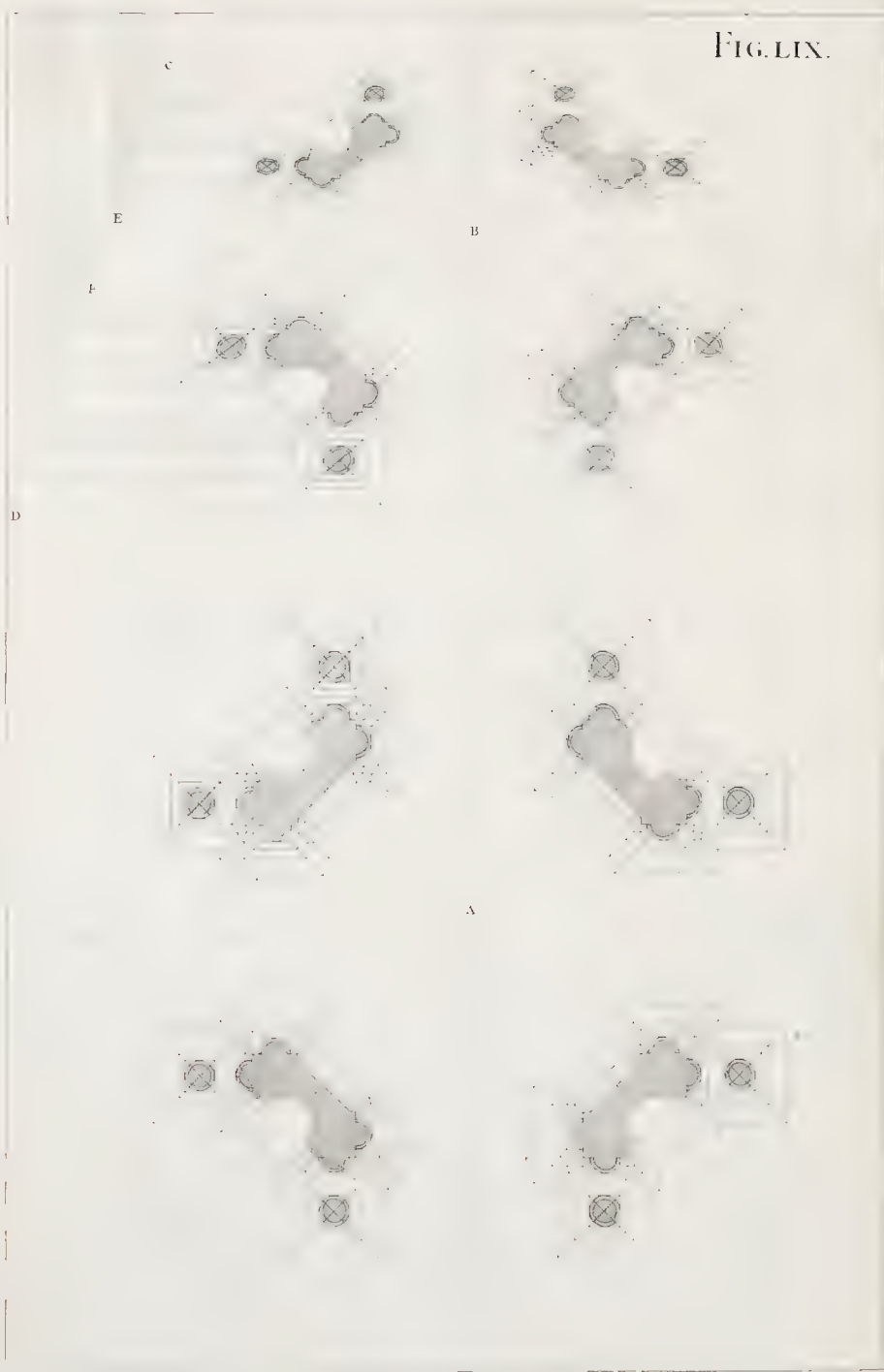


FIGURA Quinquagesimanona.

Vestigia tabernaculi octangularis.



ROFECTIONES rerum octangularium sunt quadratis difficiliore: ideò in eis explicandis diligentia non peperci. Moles cuius vestigia vides in A & B, convenit in multis cum eà quam ereximus figurâ quinquagesimaoctavâ. Visualis **CD** recipit sectiones perpendicularium, quæ deserviunt pro elevatione figuræ sequentis, ut sæpius dictum est. Si facies interior delineanda sit seorsim à facie anteriori, illam persciet ope linearum **CE**, istam ope linearum **FD**.

The Fifty-ninth FIGURE.

The Plans of an Octangular Tabernacle.



CTANGULAR Figures being more difficult to be put in Perspective, than the Square; I shall use my best Endeavours to render the Method as plain as possible. The Composition whose Plans you see in A and B, has much Affinity with that describ'd in the Fifty-eighth Figure. The Visual **CD** receives the Sections, from which Perpendiculars are rais'd for the Elevation and Profile of the following Figure, as has been often said. If you would delineate the Back-part separate from the Fore-part, you may do the former by means of the Line **CE**, and the latter by that of **FD**.

FIGURA SEXAGESIMA.

Tabernaculum octangulare.



OC tabernaculo aliquoties usus fuit pro expositione quadraginta horarum. Si colores scite inducti fuerint in duos ordines telariorum, reserctis omnibus quæ ad molem ipsam non pertinent; spectatoribus imponet, & solida videbitur. Opportebit autem exemplar externæ faciei eruere ex parte DF vestigii & elevationis; exemplar interioris faciei eruere ex parte EC, servando in omnibus regulas quas hucusque tradidimus.

The SIXTIETH FIGURE.

An Octangular Tabernacle in Perspective.



Have sometimes made use of this Tabernacle for the Exposition of the *Forty Hours*. If the Colours are laid by a skilful Hand, on two Ranges of Cloth, and the Frame cut away according to the Out-line of the Work, they will wonderfully deceive the Eye, and appear as solid; but then the outer Range must be drawn after the Plan and Elevation of the Part DF in the foregoing Figure; and the inner Range after that of EC; in all things observing the Rules hitherto deliver'd.

FIG. LX.







FIG. LXI.

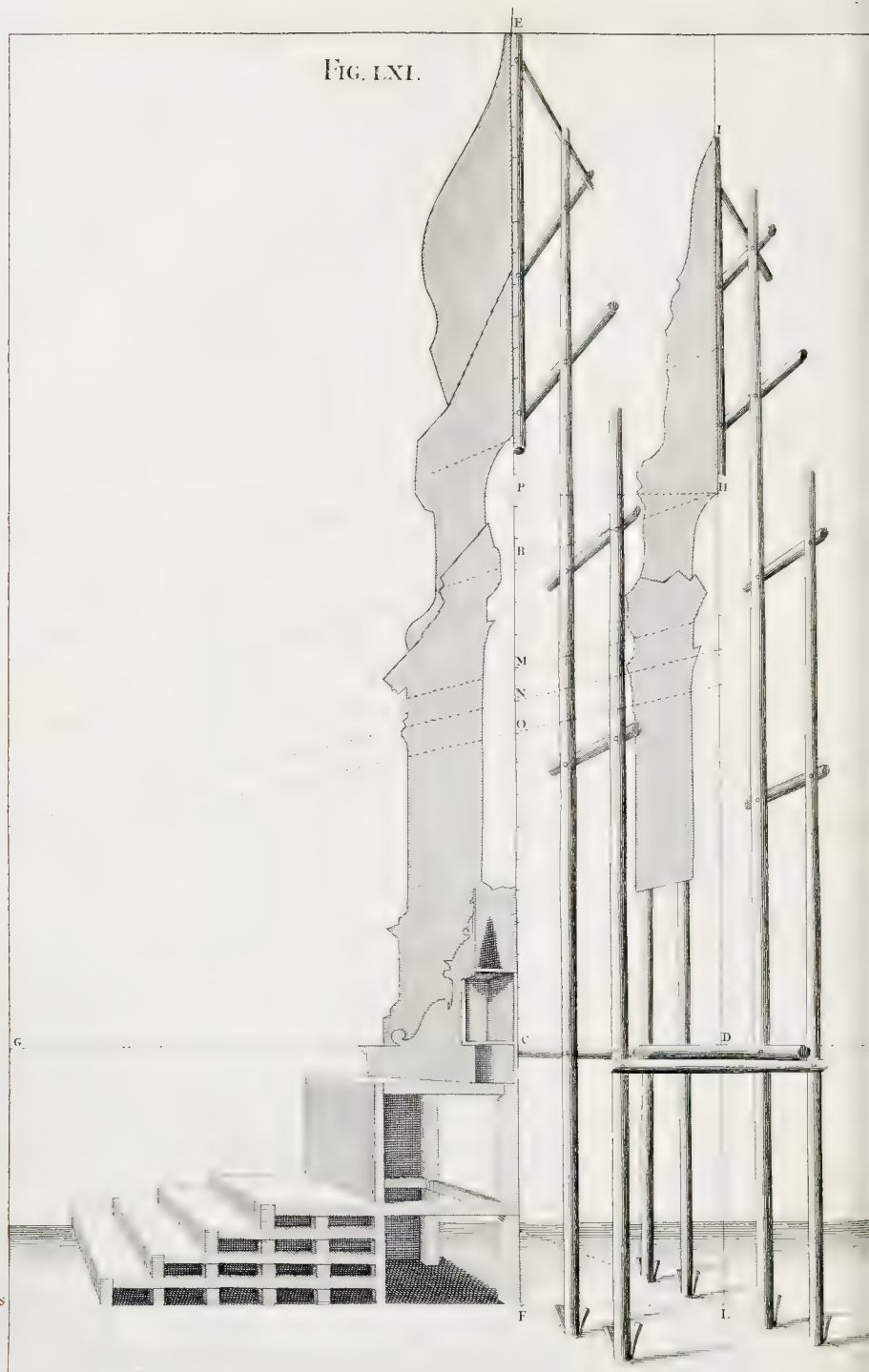


FIGURA Sexagesimaprima.

Modus erigendi machinas, quæ constant pluribus ordinibus telariorum.



X figuræ inspectione addisces modum erigendi machinas, quæ constant pluribus ordinibus telariorum. Tabernaculum hoc nostrum indiget duobus tantum ordinibus; nam telaria propinquiora oculo expriment faciem externam, remotiora exhibent faciem internam. Ne autem lateant stipites quibus telaria sustentantur, medietatem telariorum adumbrare omisimus. Recta LS est linea plani, recta DG est linea horizontalis; ac punctum distantie quod cadit extra paginam in recta CG prolongatâ, debet esse remotum à puncto C, quantum in superiori parte figuræ quinquagesimanonæ, punctum distantie est remotum à puncto oculi. Eadem horizontalis DG secatur normaliter in C à recta EF, quæ est sectio externæ faciei ta-

bernaculi, & ex C incipiunt divisiones in partes æquales pro reticulatione anterioris faciei telariorum, ut dicemus figurâ sexagesimasecunda. Recta IL quæ est sectio internæ faciei tabernaculi, distat ad libitum à recta EF cui est parallela. Porro, per divisiones rectæ EF (ut vides in M, N, O) ex puncto distantie ducenda sunt visuales ad rectam IL pro reticulatione aliorum telariorum: distantia enim DC facit ut augere oporteat ea quæ in telariis pinguntur, alioquin iusto minora viderentur. Atque hinc dignosces, cur arcus qui in telariis anterioribus pertingeret solum ad B, in posterioribus eleuetur usque ad H.

Figura sequenti proponemus modum delineandi faciem internam telariorum, adhibita reticulatione externæ faciei: ad intelligentiam verò illius methodi, fiat in hac figurâ recta HP parallela ad DC, ac recta BC dividatur in totidem partes æquales, in quot partes divisa fuerit recta PC.

The Sixty-first FIGURE.

The Manner of erecting Machines, that consist of several Ranges of Frames.



Y casting your Eye on the Figure, you'll readily apprehend the Manner of erecting the several Ranges of Frames. This Tabernacle last describ'd needs only two of them; the Frame next the Eye represents the outer Face, and the hinder Frame the inner Face thereof. I have here describ'd but the Half-Breadth of the said Frames, that you might have a Sight of the Poles and Braces which support them. The Line LS is the Line of the Plan, or Ground-line; the Line DG is that of the Horizon; and the Point of Distance, which falls without the Page CG prolong'd, is as far from the Point C, as the Point of Distance is from the Point of Sight

in the upper Part of the Fifty-ninth Figure. The Horizontal DG is cut perpendicularly in C by the Line EF, which is the Section of the outer Face of the Tabernacle; and from the Point C begin the equal Divisions for the Net-work of the foremost Frame, as is shewn in the Sixty-second Figure. The Line IL, which is the Section of the inner Face of the Tabernacle, may at pleasure be set nearer or farther from the Line EF, to which it is parallel. By the Divisions of the Line EF (as M, N, O) Lines are drawn from the Point of Distance to the Perpendicular IL, for the Net-work of that Frame; for the Distance DC obliges the Parts of D to be painted larger, otherwise they will appear less than they really ought. And from hence you may discern, why the Arch, which in the foremost Frame would reach only to B, does in the hindmost rise up to H.

In the following Figure is shewn the Manner of delineating the inner Frame, from the Net-work of the outer Face; for the better understanding of which, make the Line HP in this Figure parallel to DC, and let the Line BC be divided into as many equal Parts, as the Line PC was.

FIGURA Sexagesimasecunda.

De reticulandis telariis, quæ representent ædificia solida.



UO exemplaria tabernaculi quæ scorsim delineanda sunt, conjunctim habes in A. Utrique deservit eadem reticulatio, quam suis numeris insignivimus. Postquam ergo designaveris amplitudinem totius ædificii, cum proportionem ad ipsam reticulabis pavementum B aule cuiuspiam quod capiat rem totam, ascriptis eisdem numeris quos habet exemplar: ejusque retis ope, ducentur in pavimento lineæ terminativæ totidem membrorum, quot futura sunt telaria experientia faciem externam tabernaculi. Ubi hæc parata fuerint, singula disponantur exactè suis locis in ipsomet pavimento; ac funiculis colore nigro imlatis, repetetur in telariis eadem reticulatio, additis ad libitum pluribus visualibus; quarum adjumento dum scorsim pinguntur telaria, duci queant rectæ tendentes ad punctum oculi seu perspectivæ. Alia quoque reticulatio super pavimento necessaria est pro internâ facie tabernaculi: ac duæ reticulationes pavimenti eam inter se proportionem habebunt, quam habent divisiones rectarum IL, EF, figura sexagesima prima. Hujus retis ductu fient lineæ terminativæ telariorum cum reliquis, ut jam indicavimus.

Juxta hanc methodum nequeunt duci lineæ terminativæ interioris faciei, nisi fiat in pavimento aliud rete delecto priori, quod esset valdè laboriosum. Postquam ergo ex vestigio figuræ quinquagesimæ nonæ eruta sint duo exemplaria, in exemplari faciei externæ transferatur recta PC figuræ sexagesimæ primæ, in exemplar faciei internæ transferatur recta BC. Si autem recta PC divisa fuerit in quindecim partes æquales, dividetur BC in quindecim partes æquales, atque ope harum divisionum reticulare oportebit utrumque exemplar. Porro licet quadrata in reti exemplaris faciei externæ sint majora quadratis exemplaris internæ faciei, nihilominus idem rete pavimenti deserviet pro ducendis lineis terminativis utriusque faciei. Quæ dicta sunt de duobus exemplaribus, valent de aliis quocunque. Exempli gratiâ; si construere placeat quinque ordines telariorum, fient quinque exemplaria in papyro. Si in omnibus exemplaribus usurpetur eadem reticulatio, in pavimento facere oportet quinque diversas reticulationes. Si autem in exemplaribus fiant quinque diversæ reticulationes, in pavimento sufficit una.

Curandum est ut singula retis quadrata in telariis sint exacta, omnesque illorum anguli sint recti. Modus expeditissimus faciendi angulos rectos est hujusmodi. Posito uno crure circini in puncto F lineæ rectæ EF, alioque crure posito utilis in O, fiet circulus GFI, & ex puncto G diameter GI. Si recta HF transeat per puncta I & K, est normalis ad EF.

The Sixty-second FIGURE.

Of making the Net-work on Frames, for representing the Architecture as solid.

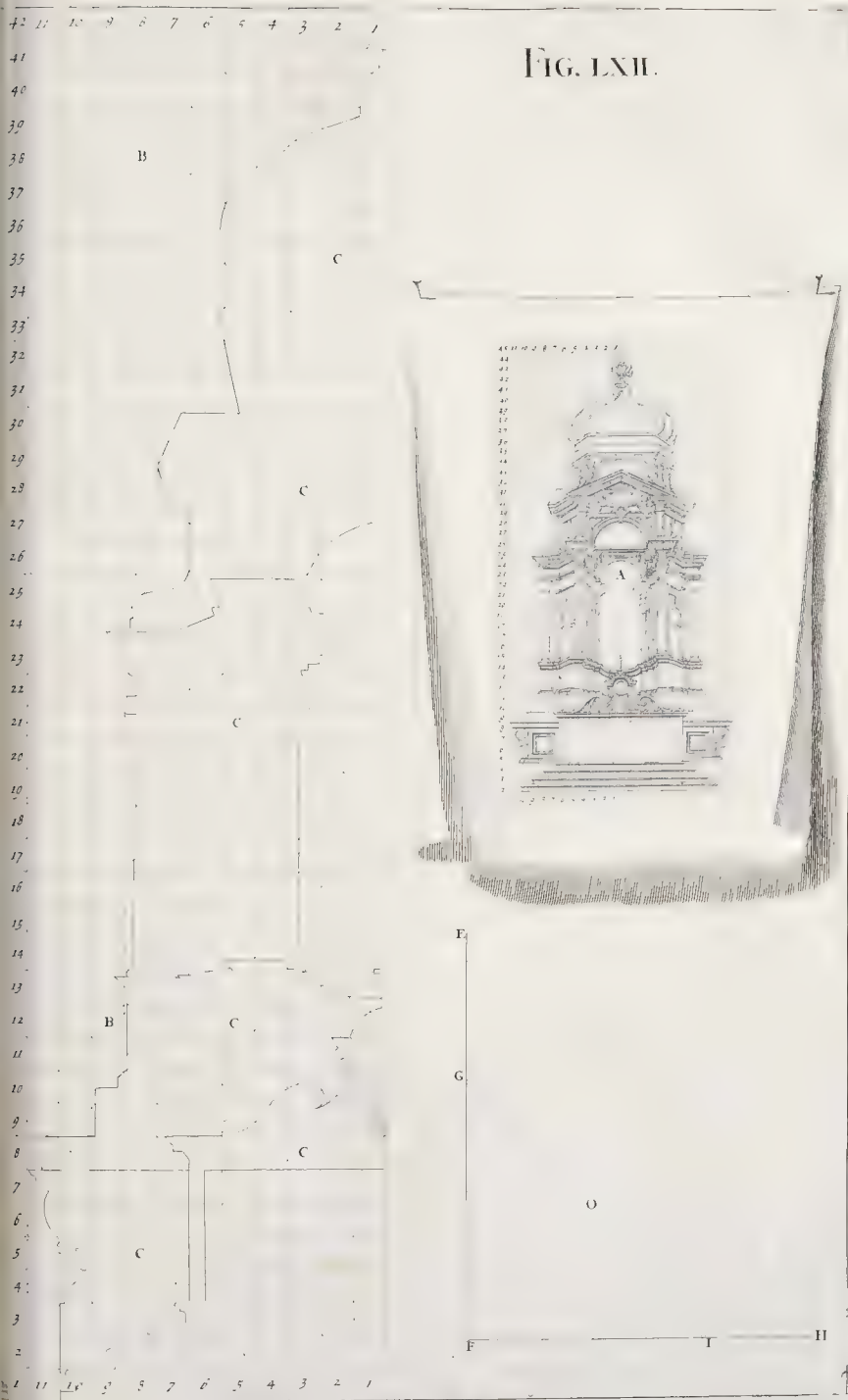


YOU have jointly in A, the two Designs of a Tabernacle, which are to be drawn separately; the same Net-work serving for both, which is also mark'd with Numbers. When you have therefore resolv'd on the Size of your Work, on the Pavement of some Room capacious enough make a Net-work answerable, and affix thereto the Numbers, as in your Copy: By the Help of which, you may on the Pavement describe the Out-line of all those Members that are requisite to the outer Frame of the Tabernacle. This being done, let the Frame be laid exactly in its place on the said Pavement, and with a black Line strike thereon the same Net-work; adding as many visual Lines as you please, which will be of Use for drawing Lines to the Point of Sight, when you come to paint the Frames asunder. Another Net-work on the Pavement is also necessary for the inner Face of the Tabernacle, which should bear such Proportion to this, as the Divisions of the Line IL do to those of EF in the Sixty-first Figure; and by this means the Out-lines of the inner Frame, &c. may be drawn, as has been shewn already.

Thus the Out-line of the inner Face can't be describ'd, without rubbing out the first Net-work, and making a second on the Pavement; which would be very troublesome. Wherefore, from the Plan of the Fifty-ninth Figure, take the two Designs, and transfer the Line PC of the Sixty-first Figure on the outer Face, and the Line BC on the inner Face. Then if PC were divided into fifteen equal Parts, BC shall be divided in the same manner, and by these Divisions make the Net-work on each Design. And although the Squares of the outer Face be larger than those of the inner one, the same Net-work may nevertheless serve for giving the Out-line of both. What has been said of these two Designs, may be understood of many. For Instance; if five Ranges of Frames were requir'd, five Designs must be made in Paper. If in all the Designs the same Net-work be us'd, then five several Net-works must be made on the Pavement; but if the Designs have five different, then one Net-work on the Pavement will suffice.

You must be very careful that all the Squares of the Net-work be exactly divided, and at right Angles. The ready way of making a right Angle is thus: Placing one Foot of the Compasses in the Point F of the Line EF, and the other at pleasure in O, describe the Circle GFI; and from the Point G draw the Diameter GI. The Line FH drawn by the Points FI, shall be perpendicular to FE.

FIG. LXII.





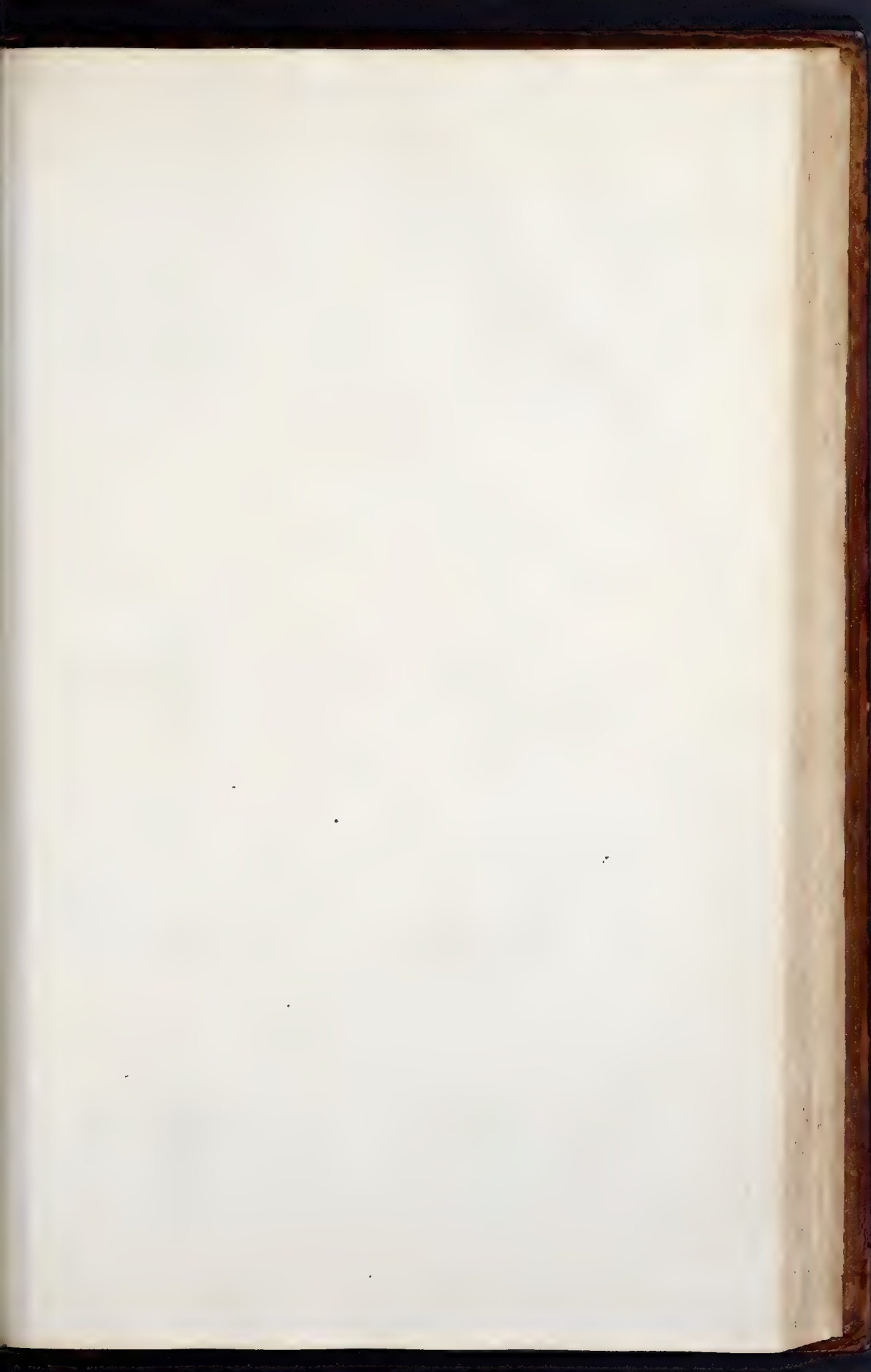


FIG. LXIII.

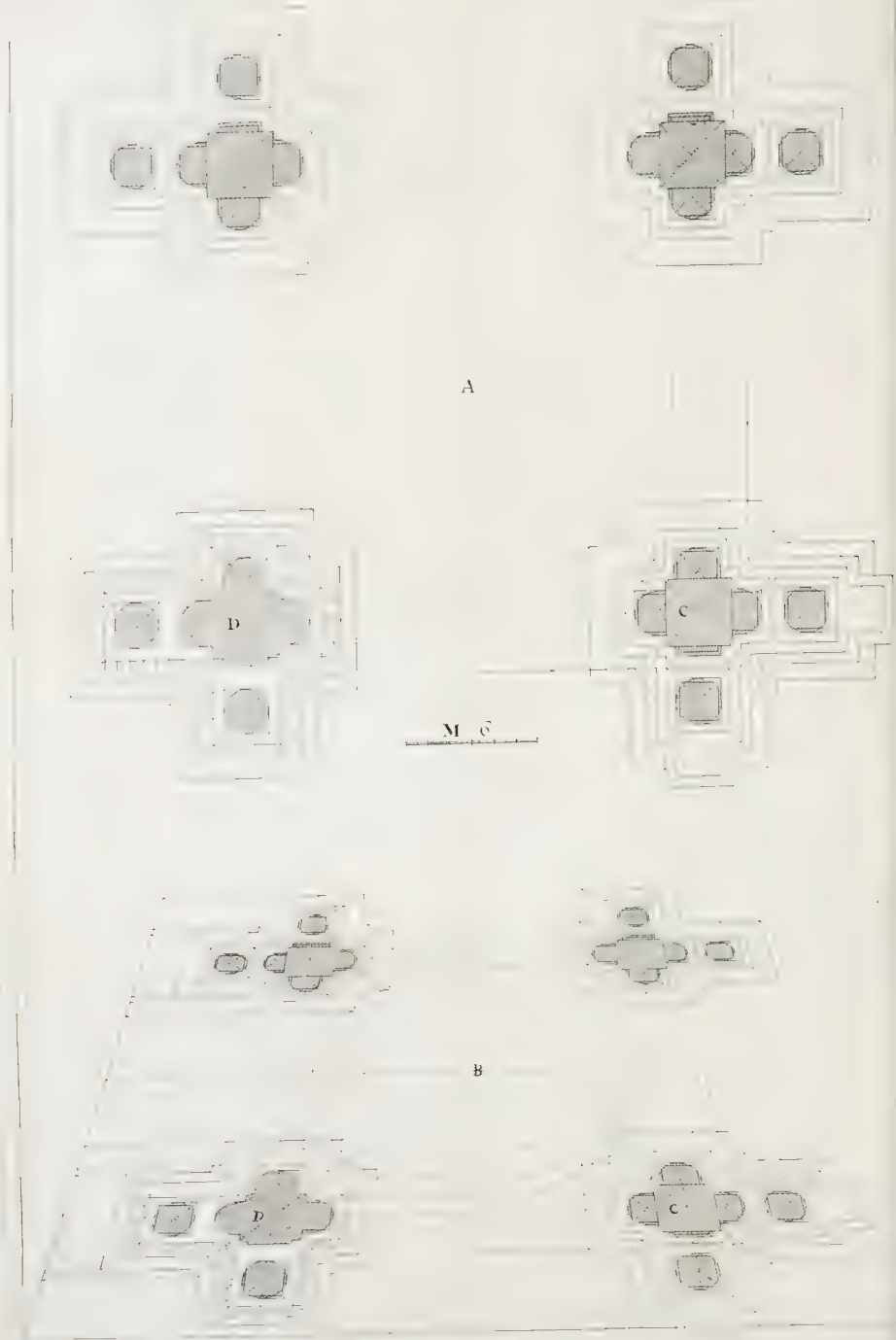


FIGURA Sexagesimatertia.

Vestigia ædificii quadrati.



ESTIGIUM geometricum A hujus ædificii habet in B suam deformationem. Discrimen inter pilas C & D oritur ex eo, quòd in C posita sint vestigia stylobatarum, in D autem posita sint vestigia coronicum.

The Sixty-third FIGURE.

The Plan of a square Design.



THE Geometrical Plan of this Design A, is brought into Perspective in B. The Difference between the Parts C and D arises from hence, that the Plan of the Pedestals is plac'd in C, and that of the Cornice in D.

FIGURA Sexagesimaquarta.

Ædificium quadratum.



X deformatione vestigii & elevationis, methodo consuetâ eruitur imago totius ædificii, quæ potest esse exemplar aræ maxime alicujus Ecclesiæ. Hanc machinam, non sine communis approbatione, aliquoties adhibui, in apparatus quadraginta horarum; locum in medio vacuum occupantibus Angelis cum nubibus, additâ figurarum aliquot copiam in parte inferiori. Modus faciendi in telariis remotioribus ab oculo partem tholi rotundi quam hic vides, deducitur ex iis quæ tradidimus in projectione circulorum.

The Sixty-fourth FIGURE.

A square Design in Perspective.



FROM the Plan and Upright in Perspective this finish'd Piece of the whole Work is delineated after the usual Manner, and may serve for the Design of a great Altar in a Church. I have sometimes, for the Solemnity of the *Forty Hours*, expos'd this painted on a Machine, with an universal Satisfaction; Angels with Clouds possessing the higher part of the Hemisphere within, and Groups of Figures the lower part. The Manner of designing on the inner Frame, that part of the said *Cupola* which you here see, is deduc'd from what has been before said of putting Circles into Perspective.

FIG. LXIV.

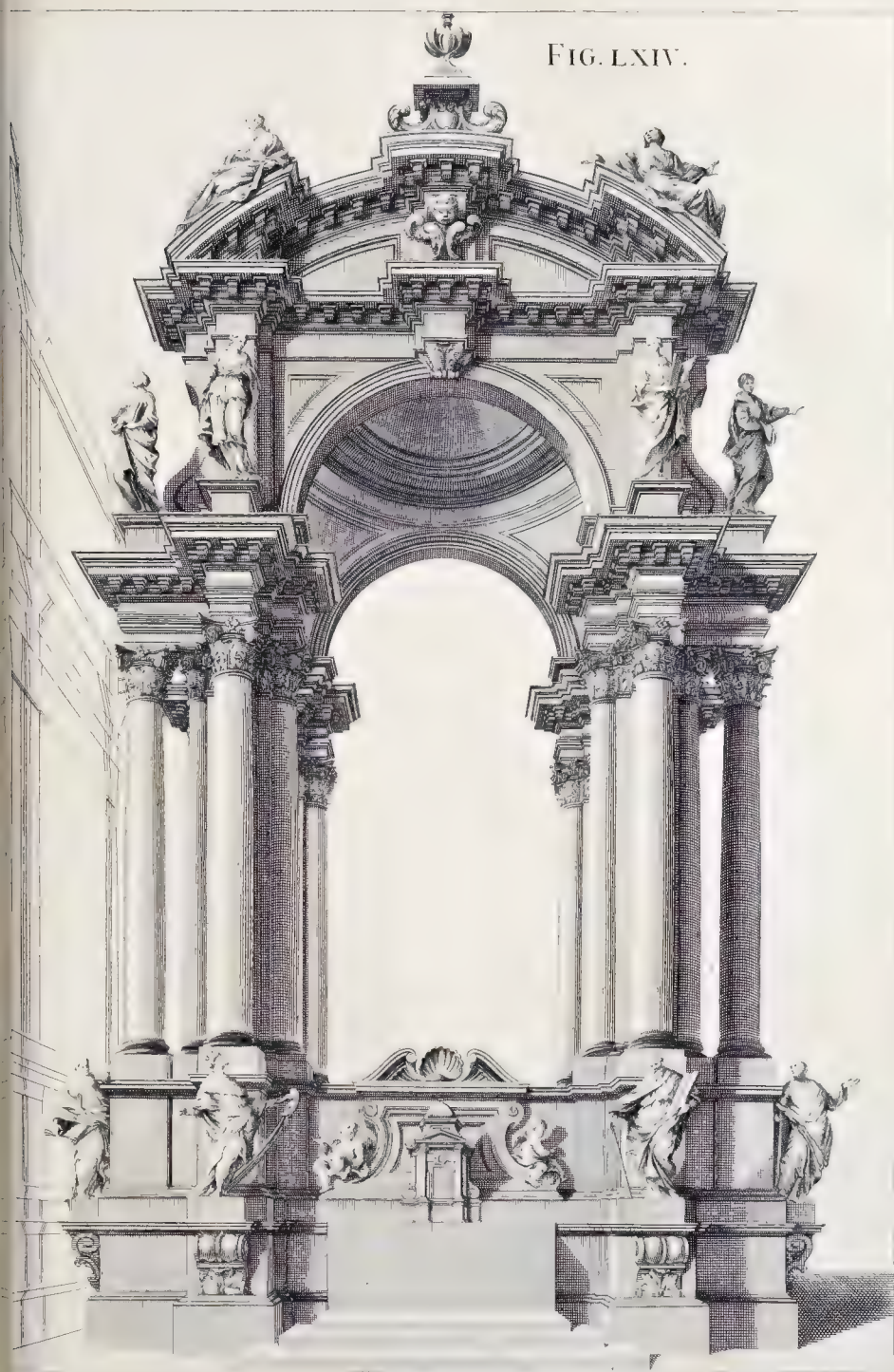




FIG LXV

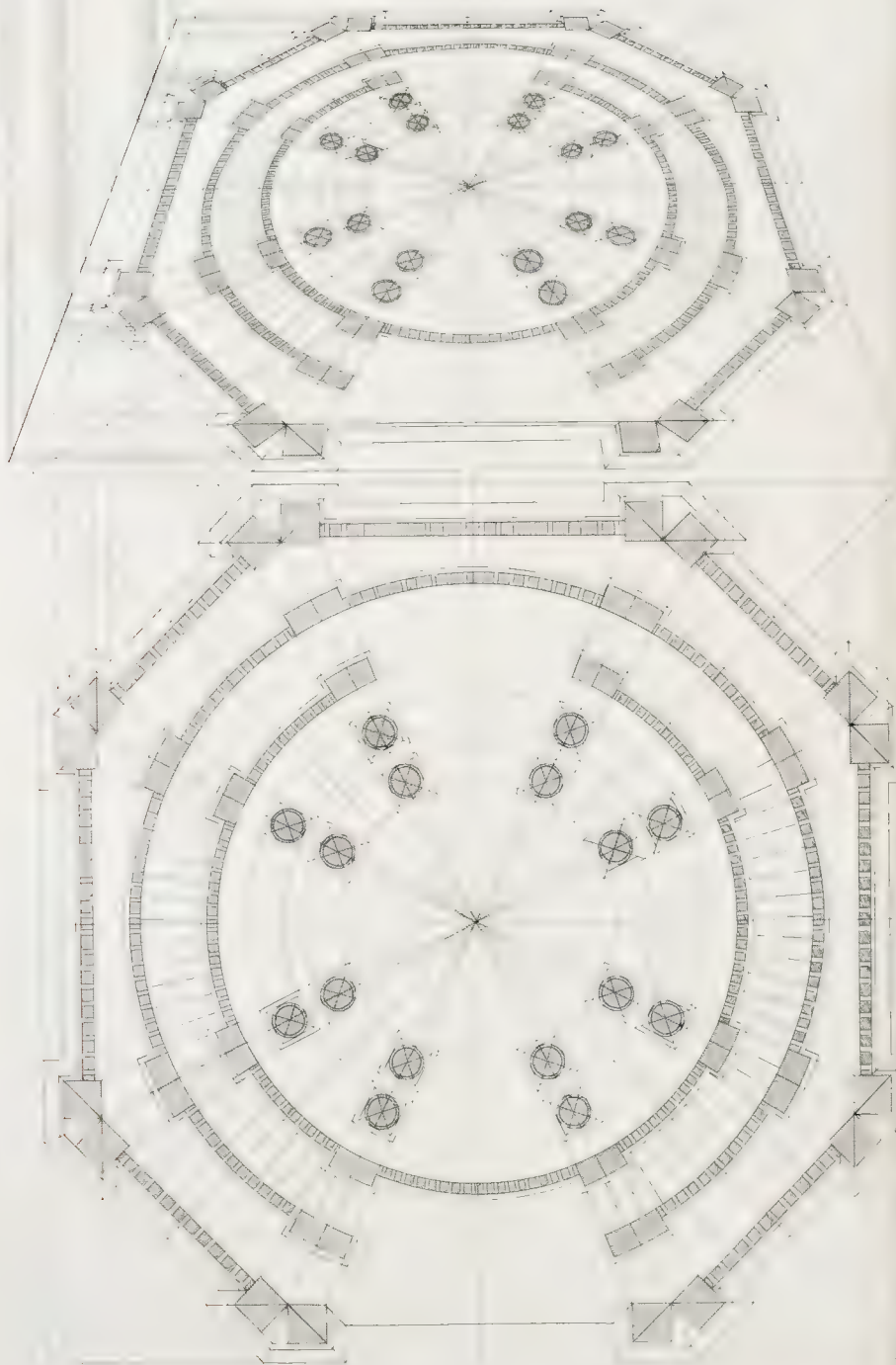


FIGURA Sexagesimaquinta.

Vestigium ædificiæ rotundi opticè imminutum.



UI sedulam operam in circulis deformandis non posuerint, eosque minimo negotio ex usu describere nequiverint, frustra conabuntur projicere vestigia ædificiorum rotundorum. Ad vitandam confusionem, proderit in vestigio notare primum lineas occultas membrorum præcipuorum; iisque translatis in elevationem, addere sensim reliquas. Hac industriâ ego ipse in hoc schemate usus sum. Quum autem experimento didicerim summam arduitatem harum descriptionum, aliam regulam adhibere jamdiu cæpi, quam, ut supra diximus, in aliud Opus reservamus.

The Sixty-fifth FIGURE.

The Plan of a Circular Work in Perspective.



H EY that have not diligently apply'd themselves to the putting Circles into Perspective, and, by a constant Practice, render'd the Work familiar to them, will in vain attempt that of the Plans of round Buildings. To prevent Confusion, you'll do well, first to mark the occult Lines of the principal Members; and after those are transferr'd into the Upright, then proceed to the rest, as I myself did in this Figure. But having found by Experience, the great Difficulty of describing these round things, I have long since made use of another Method, which, as I said before, is reserv'd for another Volume.

FIGURA Sexagesimasexta.

Projectio ædificii rotundi.



IRIFICE oculis imponunt imagines rerum rotundarum, si omnibus reſectis quæ ad eas non pertinent, exactè delineatæ ac depictæ fuerint. Hanc figuram ex veſtigio eruere oportebit metodo conſuetâ, eamque in Templo S. Ignatii Collegii Romani conſtruxi pro feriâ V & VI Hebdomadæ ſanctioris. Intra arcum, ſuper altari, locus erat urnæ ſepulcrali, cum Venerabili Sacramento. Sub altari viſebatur ſimulacrum Chriſti Domini è Cruce depoſiti: in medio columnarum, imago Beatæ Virginis dolentis; ſuper balauſtiis Angeli lugentes, cum inſtrumentis cruciatum Salvatoris.

The Sixty-sixth FIGURE.

A Circular Deſign in Perspective.



Bleſſed Virgin in extreme Sorrow; and on the Balluſtrade, Angels mourning, bearing the Inſtruments of the Paſſion.

THE Appearance of round things, if well deſign'd, maſterly painted, and the Frame cut away to the Out-line of the Work, do wonderfully deceive the Eye. This Figure is drawn from the Plan, as uſual; and was put in execution by me, in the Church of S. Ignatius of the Roman College, for the Thursday and Friday of the Holy Week. Within the Arch, on the Altar, was plac'd a ſepulchral Urn containing the Holy Sacrament. Beneath the Altar was laid a Figure of our Saviour Chriſt taken down from the Croſs. In the miſt of the Tambour, was a Picture of the

FIG. LXVI.





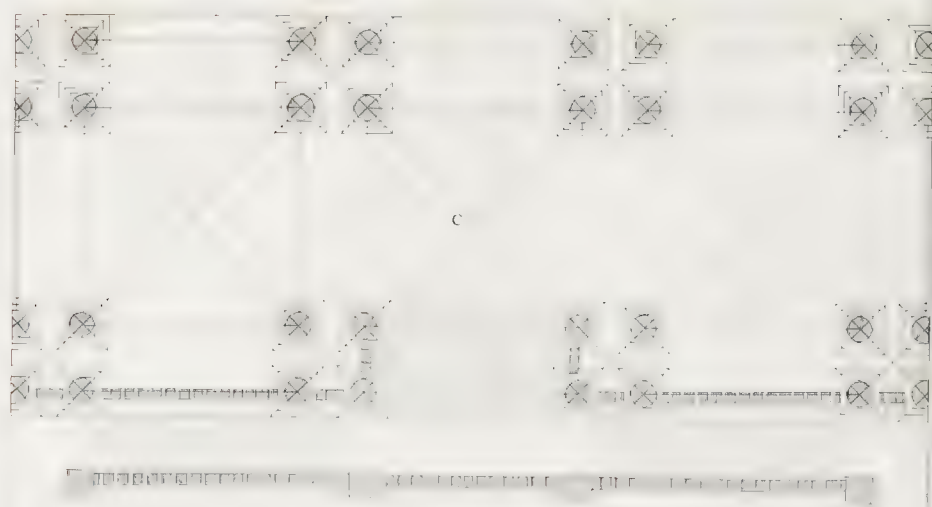


FIG. LXVII.

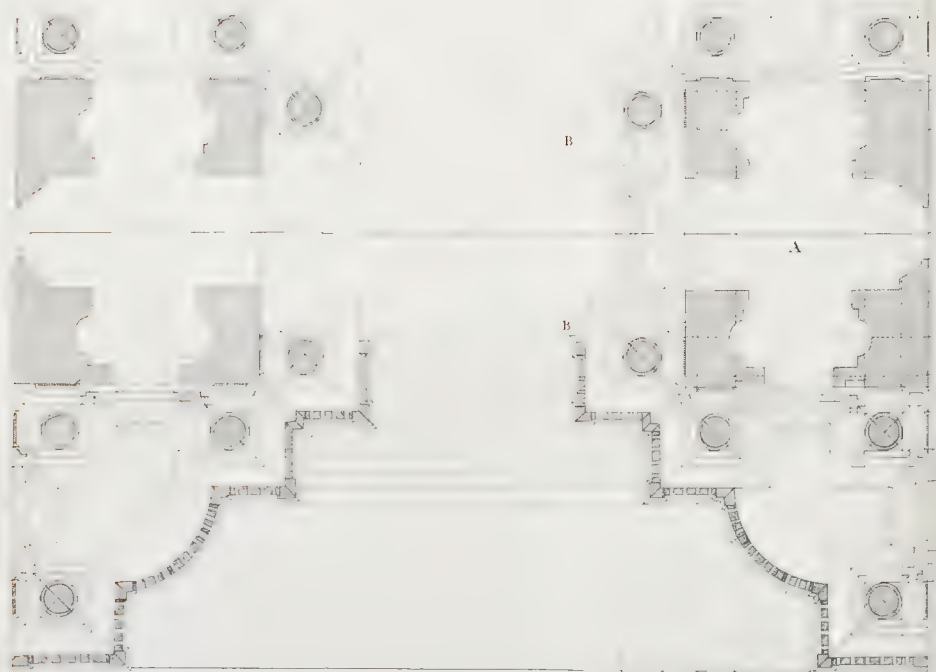


FIGURA Sexagesimaseptima.

Vestigium geometricum, ac prima præparatio ad
figuram septuagesimamprimam.



GREGIAM adèd speciem præsetulit, atque oculis adèd imposuit machina quam construxi anno 1685, pro supplicatione quadraginta horarum, in Templo Urbis Farnesiano, ut decreverim satisfacere Studiofis, publici juris faciendo non modò imaginem totius adificii, sed etiam illius vestigia & elevationes: quæ omnia eâ diligentia delineavimus, veluti Opus ipsum non pennis colorandum, sed lapidibus extruendum fuisset. Spatia nigrantia soliditatem designant parietum & columnarum. Ceteræ lineæ sunt crepidines stylobatarum & coronicum. Initium delineationis fiet ab iis membris, ex quibus oriuntur lineæ occultæ positæ in A, (quæ autem dicuntur de hac medietate, intelligi debent de aliâ) ne multitudo linearum confusionem pariat. In B lineæ curvæ occultæ sunt vestigium tholi qui complet summitem adificii. Vestigium C exhibet ambulacrum interius. Omisimus autem vestigium theatri, quia pagine angustia illud non capit.

The Sixty-seventh FIGURE.

*The Geometrical Plan, and first Preparation to the
Seventy-first Figure.*



HE Machine which I erected in the Year 1685, in the Church Farnese, or Jesuits Church at Rome, for the Devotions of the Forty Hours; had so admirable an Effect, and so pleasantly deceiv'd the Eye, that I resolv'd to gratify the Studious, not only with a general View, but with the Plan and Elevation thereof; all which was perform'd with such Exactness, that the Work itself seem'd rather to consist of solid Stones, than to be wrought by the Painter's Hand. The hatch'd Part denotes the Solidity of the Walls and Columns. The other shews the Breaks and Projectures of the Pedestals and Cornices. Left many Lines should cause Confusion, begin with those Members, which produce the occult Lines on the Side A; understanding the same also of the other half. In B the occult curv'd Lines are the Plan of the Cupola which crowns this Structure. The Plan C is that of the inner Vestibule, but that of the Theater is here omitted, through Want of Room in the Page.

FIGURA Sexagesimaoctava.

Elevatio geometrica vestigii præcedentis, & secunda præparatio ad figuram septuagesimamprimam.



N hoc schemate habes elevationem ædificii seclatam in longum, quam figurâ septuagesimâ opticè projiciemus: eisdemque membris constat videbis elevationem deformatam, quibus constat elevatio geometrica. Hinc disces ad excogitandas hujusmodi machinas, eandem Architecturæ scientiam in Pictore necessariam esse, quæ ad construenda solida ædificia exigitur in Architecto.

The Sixty-eighth FIGURE.

The Geometrical Elevation of the foregoing Plan, and second Preparation to the Seventy-first Figure.



N this Figure you have the Elevation of the aforesaid Structure dissected lengthwise; the Perspective thereof is described in the Seventieth Figure; and you may observe that both of them consist of the same Members: whence you may perceive, that for designing things of this kind, the Painter ought to have no less Skill in Architecture, than is required for the Execution of solid Works.

FIG. LXVIII.



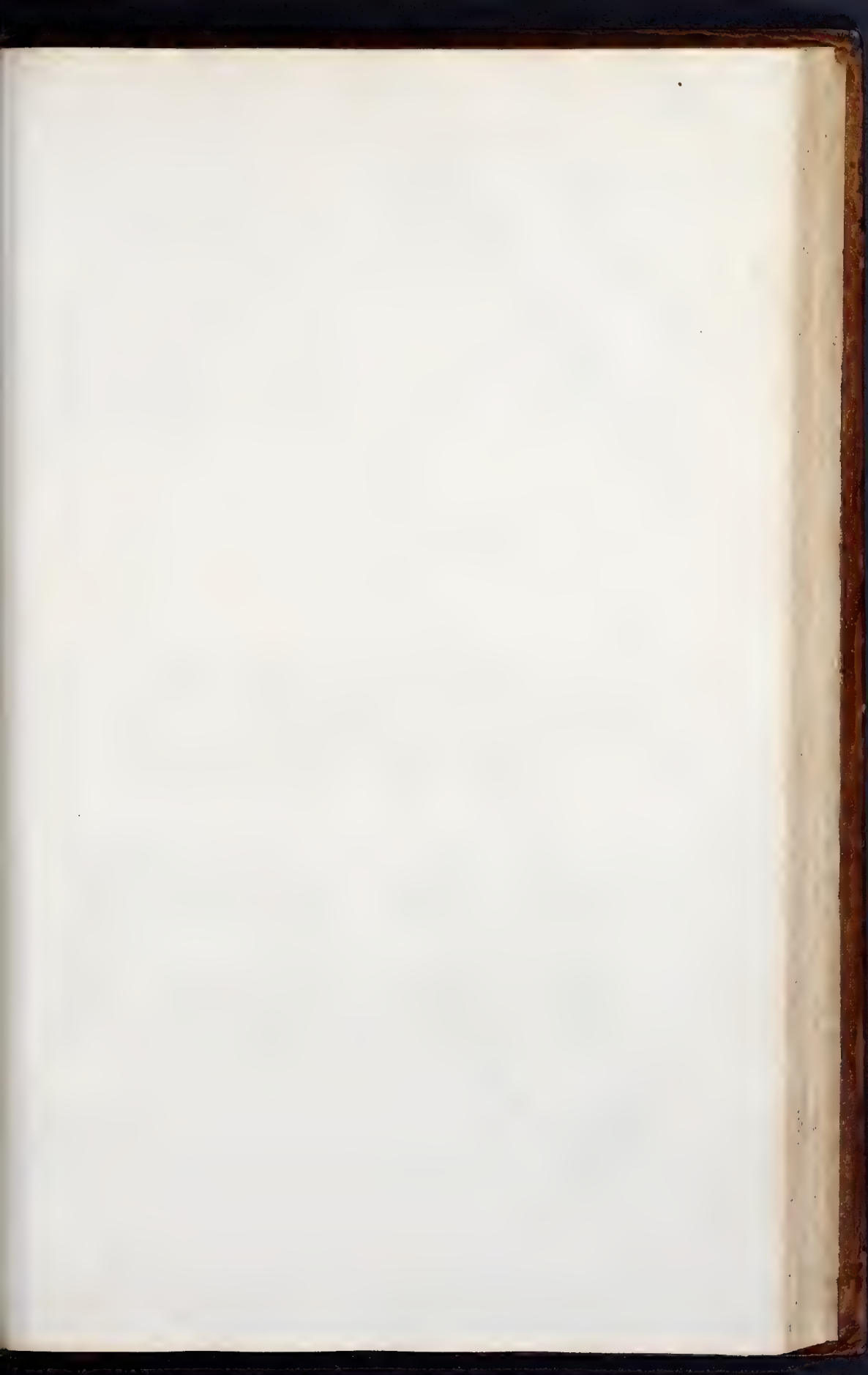


FIG. LXIX.

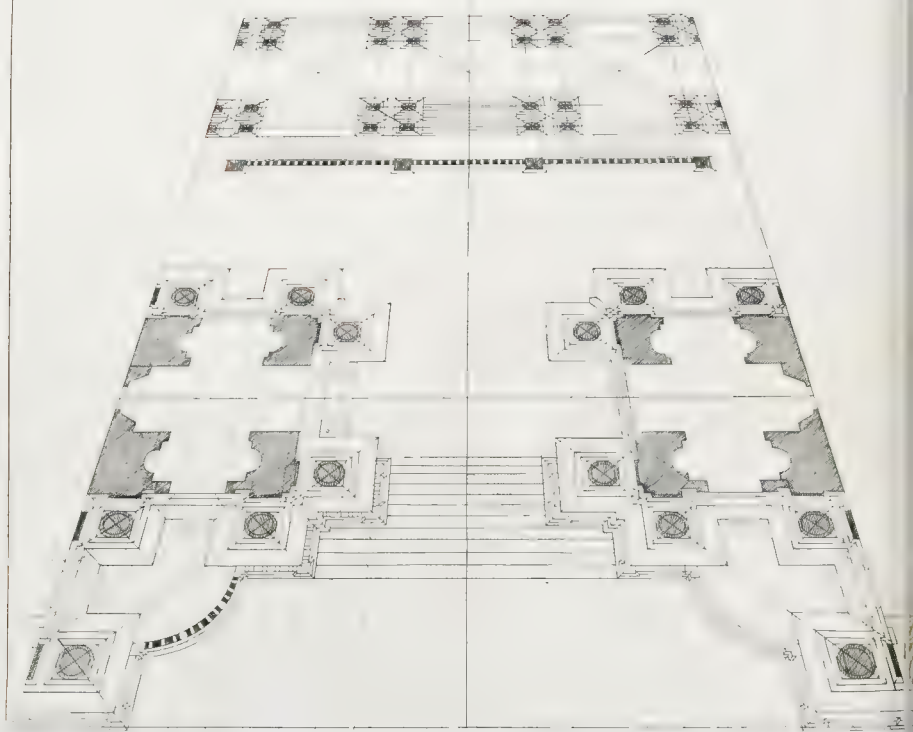


FIGURA Sexagesimanona.

Deformatio vestigii figuræ sexagesimæseptimæ, & præparatio tertia ad figuram septuagesimamprimam.



RTIFICIUM projectionis vestigii hujus, explicatum à nobis est figurâ quadragesimasecundâ. Nimirum, ut parallele sint invicem distantiores, lineam plani deorsum protraximus, ut ex intuitu figuræ statim cognosces.

The Sixty-ninth FIGURE.

The Plan of the Sixty-seventh Figure in Perspective, and third Preparation to the Seventy-first Figure.



THE Artifice us'd in projecting the Perspective of this Plan, has been already shewn in the Forty-second Figure; namely, that for giving the greater Distance between the Parallels, the Ground-line is drawn much lower than its true Place; as is manifest on Inspection of the Figure.

FIGURA SEPTUAGESIMA.

Deformatio elevationis figuræ sexagesimæoctavæ, & præparatio quarta ad figuram septuagesimamprimam.



UÆ dicta sunt de projectione vestigii nostri ædificii, habent locum in elevatione. Nimirum, ut parallele invicem notabiliter distarent, usi sumus industriâ quam declaravimus figurâ quadragesimâsecundâ.

The Seventieth FIGURE.

The Perspective of the Elevation of the Sixty-eighth Figure, and the fourth Preparation to the Seventy-first Figure.



HAT has been said of the Perspective-Plan of this Structure, is also here practis'd in the Elevation; namely, that the Parallels might be sufficiently distinct, the Perpendiculars are drawn more remote from the Point of Sight, as was shewn in the Forty-second Figure.

FIG LXX



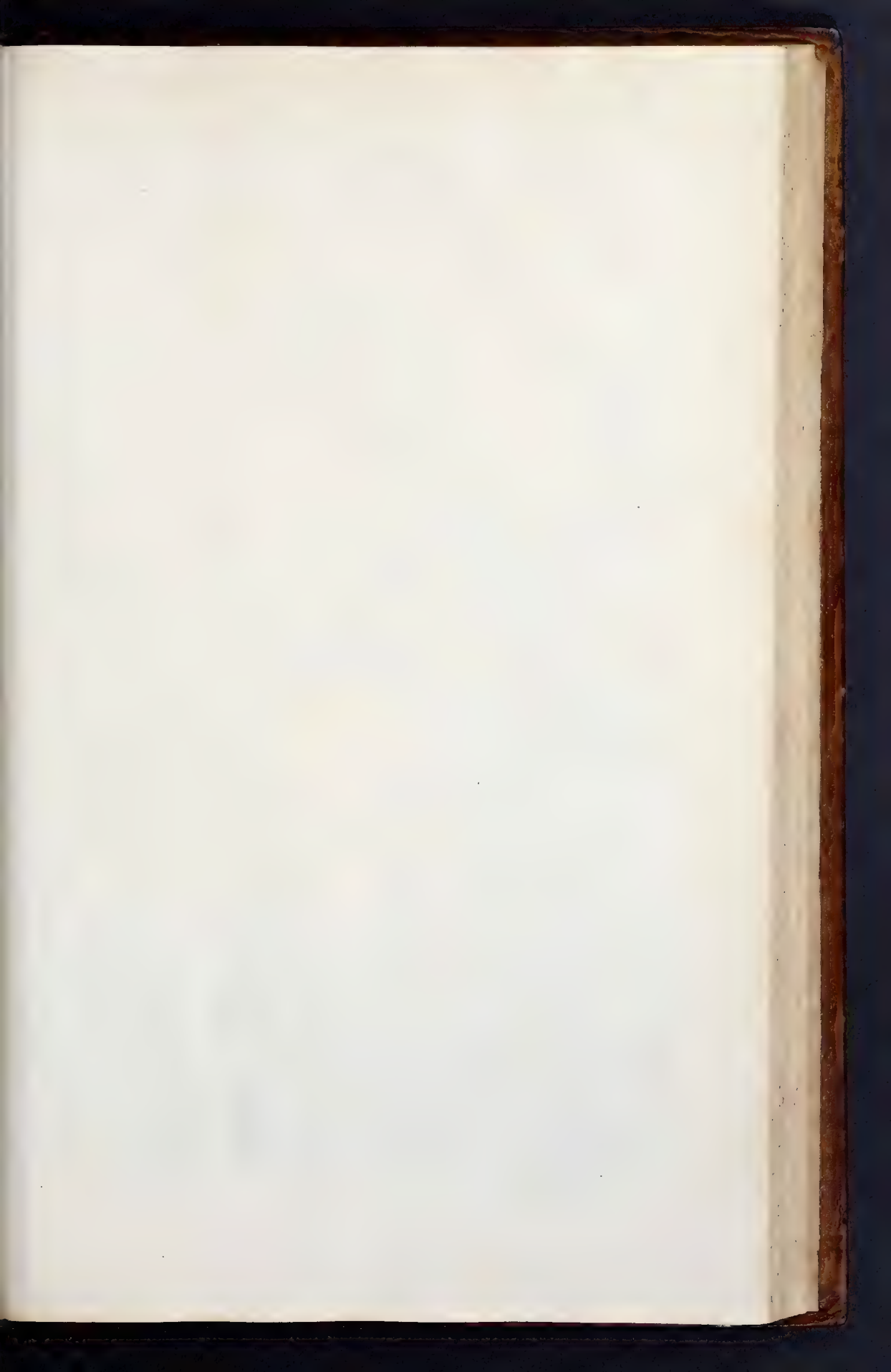


FIG. LXXI.

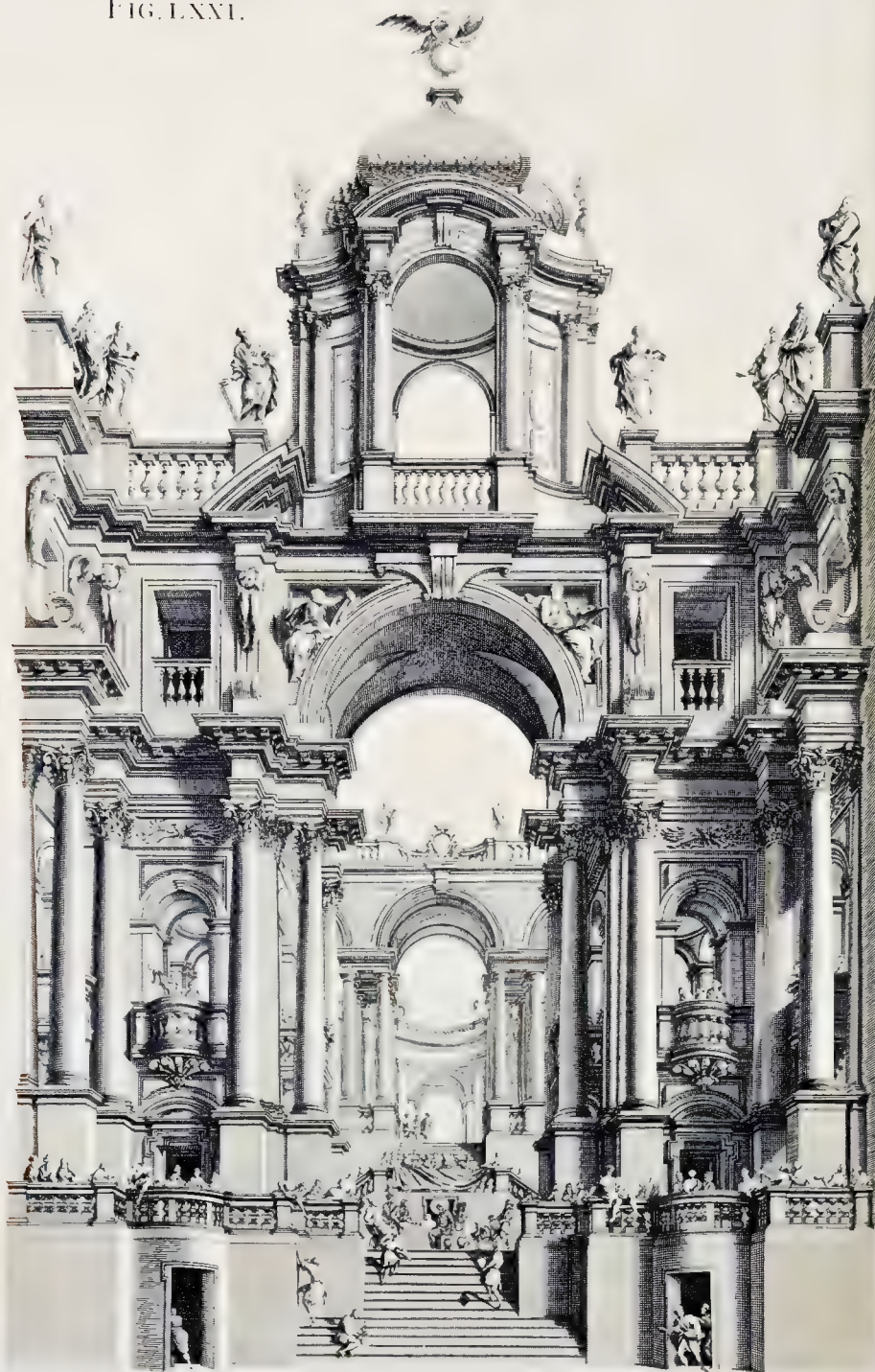


FIGURA Septuagesimaprima.

Theatrum repræsentans Nuptias Canæ Galilææ, constructum Romæ, anno 1685. in expositione Ven. Sacramenti in Templo Farnesiano Societatis JESU.



X antecedentibus præparationibus eruius projectionem nobilis hujus Architecturæ, quæ oculos implebat tum ad lucem solis diurnam, tum præcipuè ad lumen candellarum; ex quibus multæ palam erant expositæ, aliæ omnino latebant, ut illuminarent sex diversos ordines telariorum quibus tota machina constabat, non computando in hoc numero telaria, quæ in medio archûs maximi exprimebant nubes re-

fertas Angelis adorantibus Venerabile Sacramentum. Nubes istas omisimus, ne absconderentur partes interiorum ædificiorum. In disponendis autem ordinibus telariorum, servatus est modus quem declaravi figurâ sexagesimaprima & sexagesimasecunda; ac præterea in eligenda eorum distantia curatum fuit, ut candelæ in parte postica telariorum collocatæ, illuminarent faciem telariorum interiorum. Porro quot membra præcipua in duabus faciebus majoribus, totidem distincta telaria numerabantur, quorum proinde connexiones discerni vix poterant; eorumque aliquot paria ferreis hamulis copulata erant, ut explicari ac replicari possent, ad faciliorem tractationem diuturnioremque conservationem.

Qui bucûsque sequuti me fuerint, nihil dubito quin suum iter felicissimè sint prosequuturi; atque Opera his nostris majora melioraque inventuri.

The Seventy-first FIGURE.

A Theater representing the Marriage of Cana in Galilee, erected in the Jesuits Church at Rome, in the Year 1685; for the Solemnity of exposing the Holy Sacrament.



FROM the foregoing Preparations, is drawn the Perspective of this noble Piece of Architecture; which struck the Eye when seen by Day-light, but was more especially surprizing by Candle-light; many of the Candles being expos'd to Sight, and others altogether hidden, to illuminate the six different Ranges of Scenes, of which the whole Work consisted, without reckoning that in the midst of the great Arch, representing Clouds fill'd with Angels adoring the blessed Sacrament. Those Clouds are here omitted, that the inner Parts of the Work might be the better seen. In disposing the several Ranges of Scenes, the same Method was

observ'd, which was deliver'd in the Sixty-first and Sixty-second Figures; and great Care was also taken in their Distances, that the Candles plac'd on the Back of one of them might illuminate the Face of the other behind it. Moreover, each Scene consisted of as many parts, as there were principal Members in the two greater Façades; so that the Joints were scarcely discernible: and some Pairs of them being coupl'd with Hinges, folded and unfolded, for the more easy managing and preserving them.

I doubt not but those who have follow'd me thus far, will be encourag'd so to prosecute their Studies, as to be able to design even greater and more noble Works, than these of mine.

FIGURA Septuagesimasecunda.

De theatris scenicis.

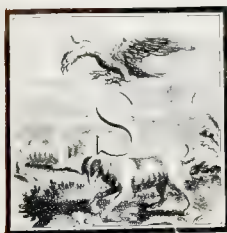


THEATRIS quæ jam delineavimus affinia sunt theatra scenica: in his tamen non adeo facile reperitur punctum oculi seu perspective. Præterea, quia ex obliquitate canalium intra quos moventur scena, oritur ut linea recta quæ videri debent parallela ad lineam plani, non debeant esse parallela sed obliqua, harum delineatio difficultate non caret. Incommodum istud vitari posset adhibendo canales parallelos ad poscenium, ut alicubi fieri solet, præsertim in Germaniâ. Nihilominus usus Italicus offert hoc adjumentum, ut illi quibus incumbit suggerere actoribus, vel scenas movere, aliisque similibus præesse, facilius lateant & liberius fungantur munere suo.

Ut brevem summam habeas eorum quæ deinceps latius declaraturi sumus, hanc figuram contemplare. 1, 2, 3, 4, est vestigium aula quæ habet in longitudine centumviginti palmos Romanos, in latitudine sexaginta palmos; ut ostendit scala S triginta palmorum. Medietatem loci occupat theatrum, medietatem obtinent podia & loca spectatorum. O punctum in quo ununtur lineæ visuales, D locus pro apparentiis rerum magis ac magis distantium. BC locus poscenii. HH sunt canales obliqui, quorum latitudo est dupla latitudinis scenarum. FG frons & facies theatri. AO ejus profunditas aut longitudo. E locus pro psaltribus, tibicinibus, & filularioribus. K spatium pro spectatoribus. I vestigium podiumum. L scala podiumum. N ipsorum elevatio. M declivitas tabulati, cum sectione & elevatione theatri, & scenis ex latere inspectis, quæ cum suis canalibus congruunt, ut demonstrant lineæ occultæ. OO lineæ normalis ad lineam horizontalem. P & Q elevatio scenarum coram inspectarum, quæ introsum stellantur; & in latitudine congruunt cum canalibus vestigiis B, in altitudine cum sectionibus elevationis M; ut constet ex lineis occultis. In eadem elevatione M pars altitudinis tribuenda est scenis, pars laquearibus R, per quæ jungitur unumquodque par telariorum. VV lineæ ad explorandum an detur vacuum inter scenas & laquearia, vel inter scenas, vel inter laquearia. In quibusdam autem scenis, loco laquearium pinguntur nubes & ær.

The Seventy-second FIGURE.

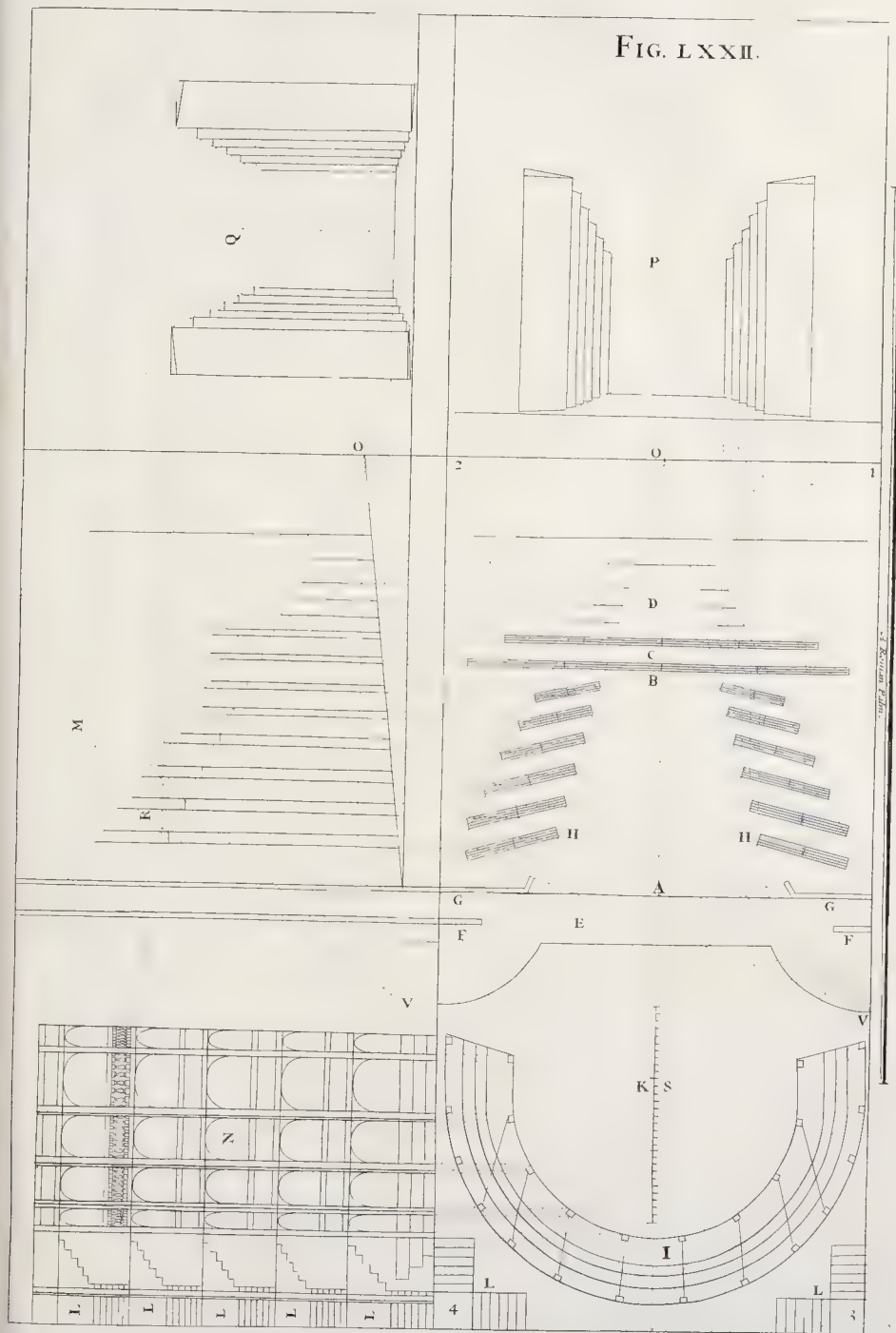
Of Scenes for the Stage.

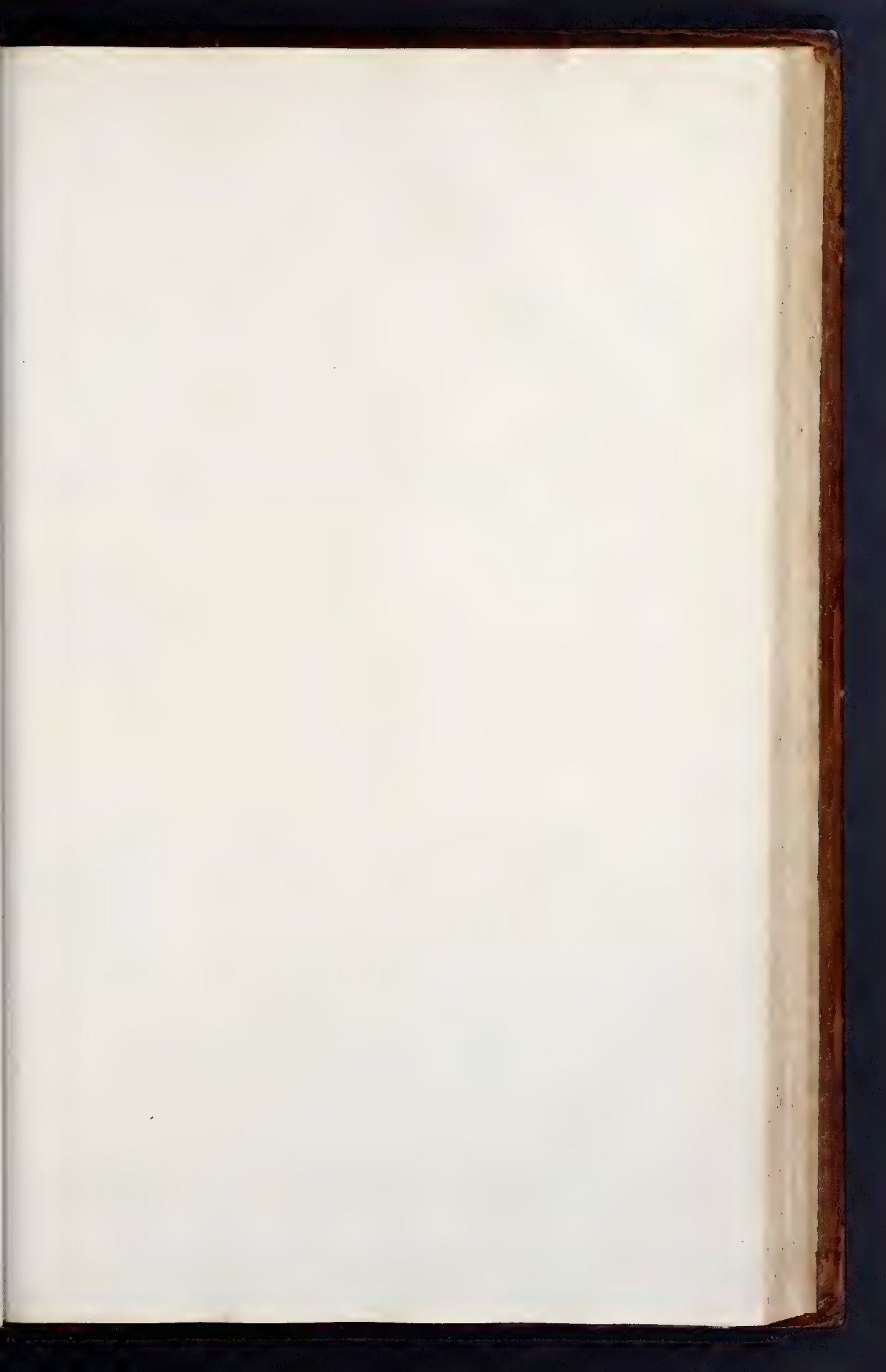


CENES for the Stage have very much Affinity with those lately describ'd, but the Point of Sight is not so easily found in these; and from the Obliquity of the Grooves in which the Scenes run, it comes to pass, that the right Lines which ought to appear parallel to the Line of the Plan, must not be drawn parallel thereto, but oblique; which is a Work of some Difficulty. This indeed may be avoided, by fixing the Grooves parallel to the Poscene; as is usual in some Places, especially in Germany. Nevertheless, the Italian Manner has this Advantage; That those who are employ'd to prompt the Actors, and shift the Scenes, &c. are less expos'd to Sight, in the Performance of their Business.

In this Figure I have given you an Abridgment of those things, which shall hereafter be more enlarg'd on. The Numbers 1, 2, 3, 4, denote the Area of a Hall an hundred an twenty Roman Palms in Length, and sixty in Breadth; as is manifest from the Scale of thirty Palms mark'd S. Half this Space is taken up by the Stage, the other half by the Spectators. O is the Place of those things that are to appear most remote. BC is the Place of the Poscene. HH are the oblique Grooves, whose Lengths are double the Breadth of the Scenes. FG is the Front of the Stage. AO is its Depth or Length. E is the Place for the Musick. K is the Room for Spectators. I is the Plan of the Galleries. L the Stairs to the same. N is the Elevation of the Galleries. M shews the Declivity of the Floor, with the Section and Elevation of the Stage and Scenes view'd on the Side; answering their respective Grooves, as the occult Lines demonstrate. OO is a Line perpendicular to that of the Horizon. P and Q are the Elevation of the Scenes view'd in Front, turning inwards, in Breadth agreeing with the Length of the Grooves of the Plan B; and in Height answering that of the Sections of the Elevation M; as is evident from the occult Lines. In this Profile M, part of the Height belongs to the Scenes, and part to their Soffits, or Ceilings, R; where each Pair of these Frames are join'd. VV are the Lines by which is esp'd what Vacancy there is either between the Scenes and their Ceilings, between the Scenes themselves, or between their respective Ceilings; though in some Scenes the Place of these last is supply'd by painting therein the Air with Clouds, &c.

FIG. LXXII.





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FIGURA Septuagesimatertia.

Aliud vestigium theatri, ubi de modo inveniendi
ejus punctum.



I pingende sint scene theatri alienjus antea constructi, delineare oportebit vestigium geometricum ex ipso erutum, (ad formam vestigii quod cernis in hac pagina) ut inveniatur longitudo theatri, seu distantia quam ejus punctum habet a puncto A: id autem nullo negotio fiet, accipiendo distantias BC inter primos canales, & DE inter ultimos, ac ducendo visuales MO, NO: nam theatrum habebit longitudinem AO, ac punctum perspective in vestigio theatri erit O. Præterea scire oportebit longitudinem & latitudinem canalium, eorumque numerum, distantias, & flexus; ac præcipuè curandum est, ut licet sint obliqui ad lineam MN, sint invicem paralleli in unoquoque latere, ac singuli tangant lineas MO, NO. Jam si rectæ AO fiat æqualis rectæ FA, in F erit punctum distantiae: adeoque si theatrum juxta methodum à nobis tradendam depictum fuerit, spectatori qui consistat in F apparebit veluti tabula picta juxta leges perspective, posita in A.

The Seventy-third FIGURE.

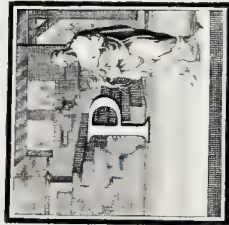
*Another Plan of a Theater, with the Method of finding
the Point of Sight therein.*



If it be requir'd to paint the Scenes of some Theater already built, the Geometrical Plan thereof must first be carefully drawn, (as you see, for Example, in this Plate) that the Length of the Theater may be found; or the Distance of its Point from that of A; which is easily done, by taking the Interval BC of the first Grooves, and DE of the latter; and drawing the Visuals MO, NO: for AO is the Length of the Theater, and the Point of Sight, or Perspective, therein, is O. Moreover the Length and Breadth of the Grooves must be known, as also their Numbers, Distance, and Obliquity; and especial Care must be taken, that though they be oblique to the Line MN, that on each Side they be Parallels between themselves, and that they all touch the Lines MO, NO. If you then make AO equal to FA, the Point of Distance will be F; and if the Theater be painted according to the Rules hereafter given, it will appear to him that views it from F, as a regular Piece of Perspective plac'd in A.

Figura Septuagesima quarta.

Sectio Scenarum Theatri.



Si maxima scenarum altitudo sit $E.B.$, recta OE dat altitudinem omnium reliquarum. Vera tamen altitudo capisset scene esset illa quam habet linea $mapa$, ex minori autem dignoscitur quantitas obliquitatis cuiusque scene appropinquat minuat altitudinem extreme illius lineae. Porro excessus quo linea $mapa$ superat minorem tunc in summo tunc in imo, diligenter notandus est, hinc enim posset intelligi figura septuagesimaquinta. Punctum M quod est remotum ab N quantum in figura septuagesimaquinta punctum F est remotum ab A , designat locum unde Theatrum spectari oporteat, ut ibidem notavimus.

In construendo tabulato solum servari haec regula, ut altitudo puncti O sit aequalis altitudinibus oculi, & elevato ex A usque ad D sit nona circiter vel decima pars ipsius longitudinis AD . Expectaret autem ad scenas facilius movendas, pavimentum F esse profundius pavimento G , ut erecto corpore sub tabulato ambulari possit.

Seventy-fourth Figure.

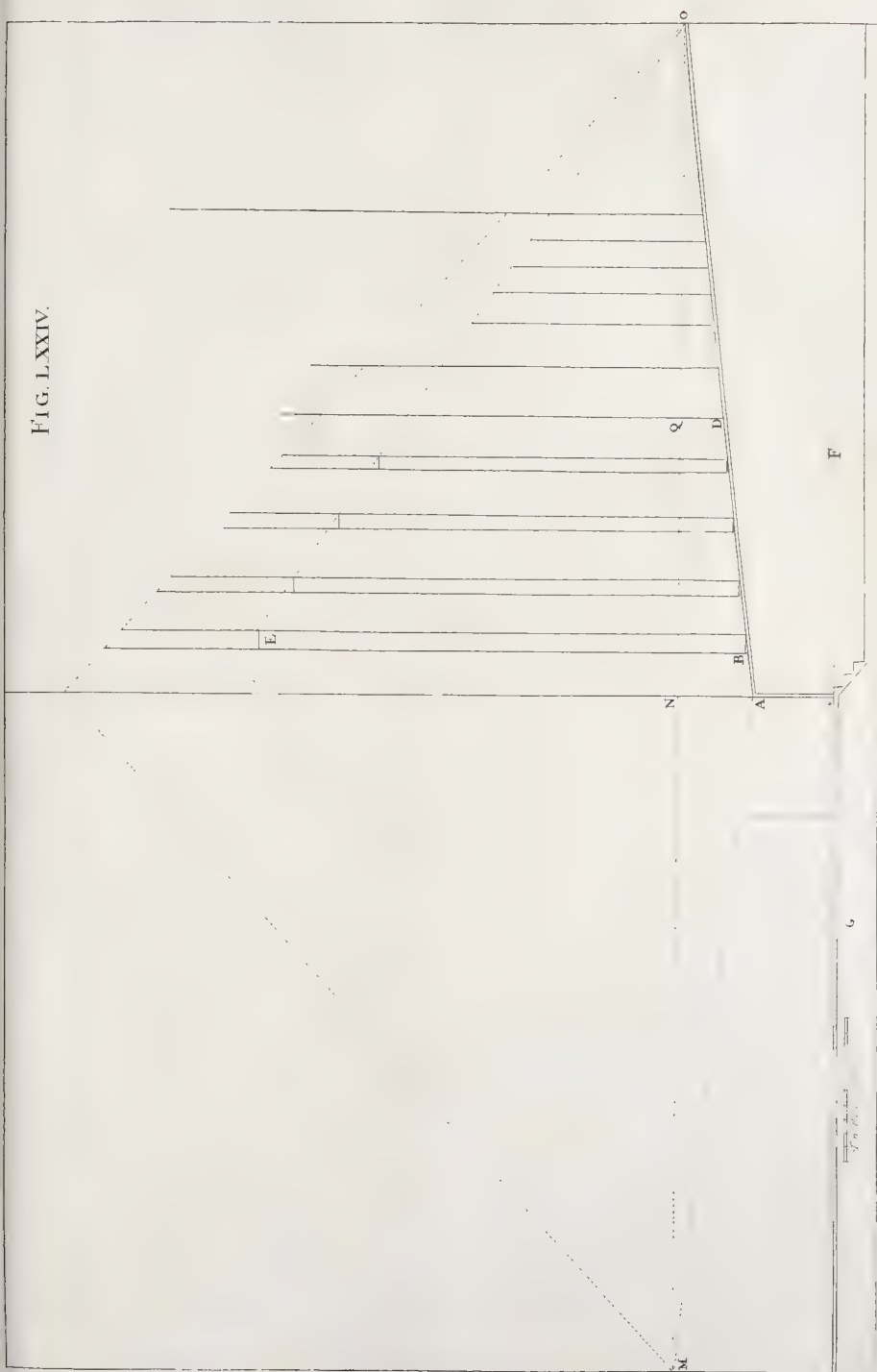
The Section or Profile of Scenes for Theaters.



F SIDUS the Plan of the Theater, the Section of the Scenes is also to be delineated, for finding the Point of the Theater in the Elevation. Wherefore, setting the Measures of the Heights which the Point A , where the Floor of the Stage begins, and the Point D of the Pole, have above the Level of the Horizontal FV ; from the Perpendicular NV draw the right Line ADO , which gives the Declivity of the Stage: then make NO parallel to FV , and equal to AO of the Seventy-third Figure: The Point of the Theater in Elevation is O ; the Point of the same on the Pole is Q . If IB be the greatest Height of the first Scene, the Line OE determines the Height of all the others. The longest of the two Lines gives the true Height of each Scene; and the shorter discovers how much of that Height the Sight loses on the Out-line, by the oblique Position of the Scenes. Moreover, the Excess of the longer Line above the shorter, as well at top as at bottom, is to be well observ'd; for on this depends the right Understanding of the Seventy-fifth Figure. The Point M , which is as far distant from N , as that of F is from A in the Seventy-third Figure, denotes the Place from whence the Stage ought to be view'd; as is there mention'd.

In laying the Floor of the Stage, this Rule is commonly observ'd, That the Height of the Point O be made equal to the Height of the Eye, and that the Rise of the Floor from A to D , be about a Ninth or Tenth Part of the Length AD . 'Tis also requisite, for the better shifting the Scenes, that the Pavement F be sunk lower than that of G , that a Man may walk upright under the Floor thereof.

FIG. LXXIV.



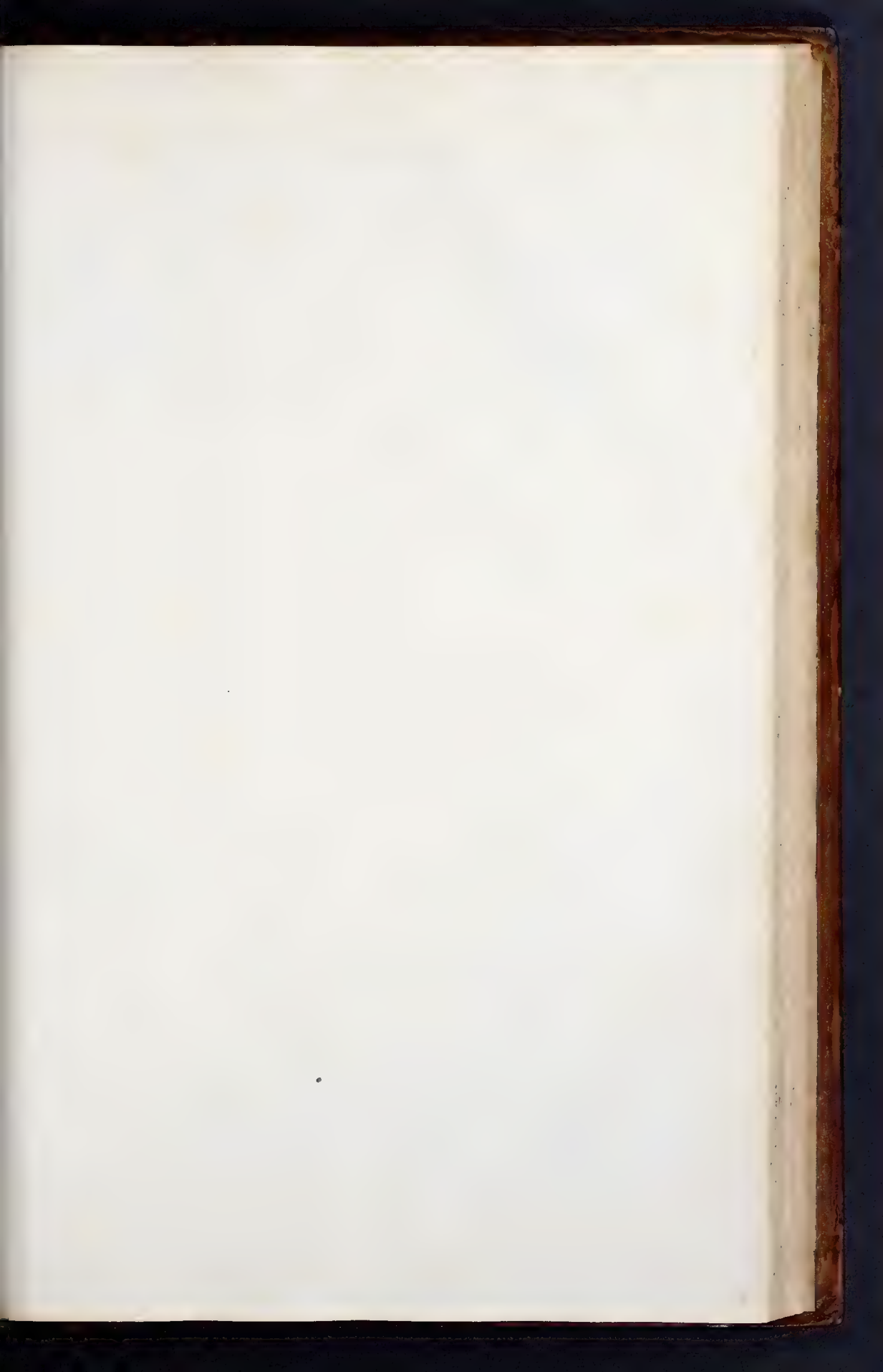


FIG. LXXV.

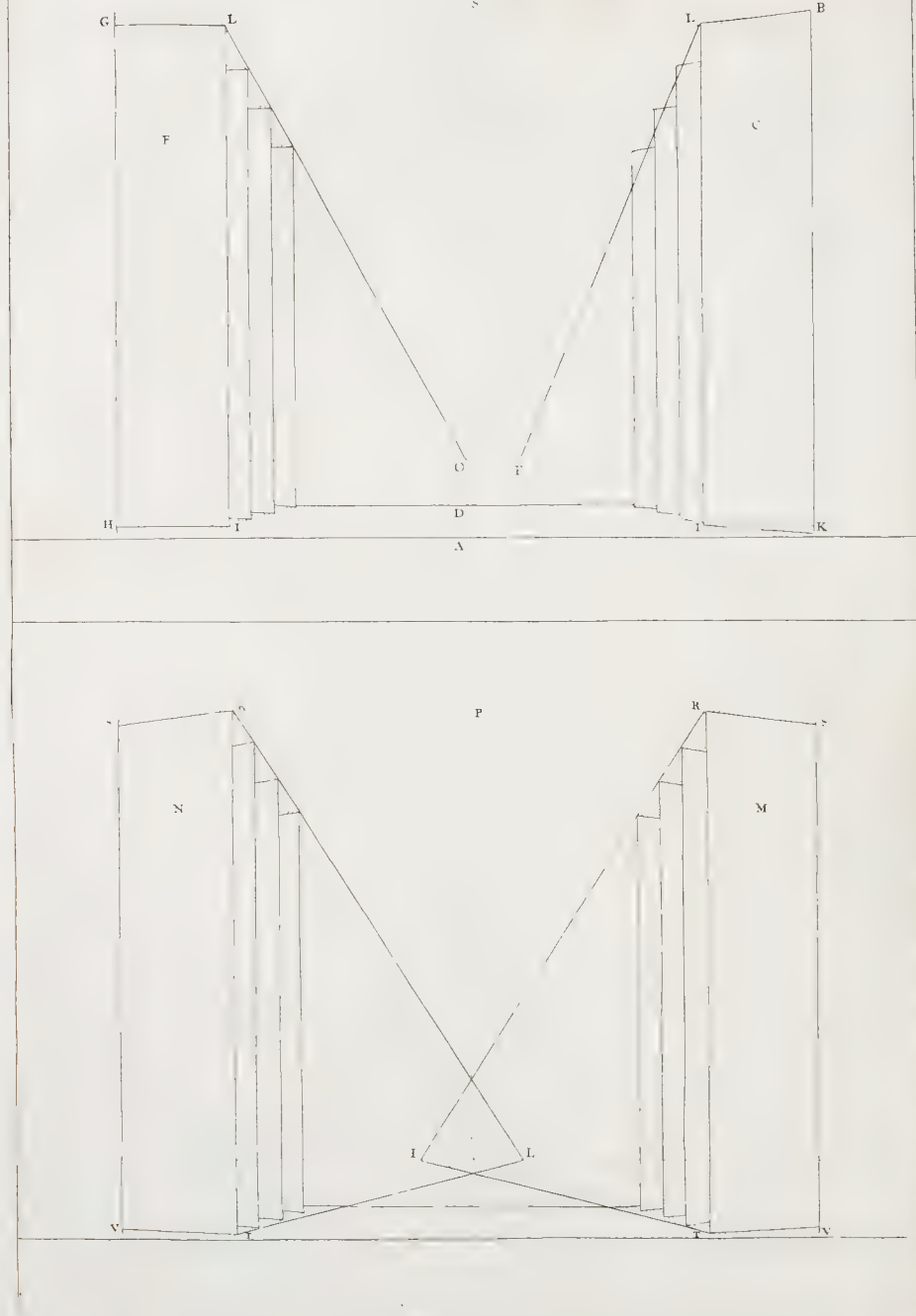


FIGURA Septuagesimaquinta.

Elevatio scenarum coram inspectarum : ubi docetur artificium ut scenæ obliquæ appareant rectæ.



CENÆ quas vides in *S*, habent suam latitudinem à vestigio figuræ septuagesimetertiæ, altitudinem ab elevatione figuræ septuagesimequartæ, ac censentur erectæ & canalibus insertæ, quæ omnia representantur etiam figurâ septuagesima-secunda in *P* & *Q*. Velim observes quantum elevetur tabulatum in principio *A*, in poscenio *D*, & in puncto theatri *O*. Similiter notare oportet elevationem singularum scenarum, quæ propter obliquitatem canalium flectuntur introrsum : iccirco lineæ *BL*, *KI*, partis *C*, non videntur parallele ad lineam plani, ut re ipsa sunt ; ac visualis *LF* non tendit ad punctum oculi *O*, sed ad punctum *F*. Si autem excessus apparens, quem recta *BK* habet in summo & imo supra rectam *LI* transferatur in partem *E* scenarum, (iudem excessus desumi etiam possunt ex figura septuagesimaquarta) ac ducantur rectæ *LG*, *IH*, habebuntur lineæ apparenter parallele ad lineam plani. Si fiat recta *LO*, quæ cum *LG* faciat angulum *GLO* equalem angulo *BLF*, eadem *LO* tendet exactissime ad punctum *O* oculi, eaque utendum erit ut visuali.

In *P* supponimus scenas *M* & *N* jacere super pavimento mas super aliis, ac duas lineas *RT* habere distantiam eandem cum duabus *LI*, & ita in reliquis scenis. Ubi notandum est, lineas *RS*, *TV*, easdem esse cum lineis *LG*, *IH*, scenarum *E* : nihilominus lineas *RS*, *TV*, non esse parallelas, quam tamen *LG*, *IH*, videantur parallele. Proinde, si fiat recta *RL*, & anguli *SRL*, *GLO*, sint æquales, recta *RL* utendum erit tanquam visuali, in *L* erit punctum accidentale oculi pro pingendis scenis *N*, ac lineæ *RS*, *TV*, habebuntur ut parallele : id autem quod superest in telario ultra tales lineas, pro nihilo computabitur, ibique pingetur aer aut aliquid aliud. Punctum accidentale oculi pro pingendis scenis *M* erit in *I*.

The Seventy-fifth FIGURE.

The Elevation of Scenes in Front, and how the oblique Scenes are made to appear direct.



THE Scenes in *S* have their Breadth from the Plan of the Seventy-third Figure, and their Height from the Elevation of the Seventy-fourth Figure ; and are suppos'd to stand perpendicularly in their Grooves ; all which is also represented in *P* and *Q* of the Seventy-second Figure. I would have you observe, how much the Floor rises, from its Edge *A*, to the Poscenio *D*, and to the Point of the Theater *O*. You should also note the Elevation of each Scene, which, by reason of the Obliquity of the Grooves, turn inward : Wherefore the Lines *BL*, *KI*, of the Part *C*, do not seem Parallels to the Ground-line, as they really are ; and the Visual *LF* tends

not to the Point of Sight *O*, but to the Point *F*. But if the seeming Excess, which the Line *BK* has at top and at bottom, above the Line *LI*, be transferr'd on the Side of the Scenes *E*, (which Excess may also be taken from the Seventy-fourth Figure) and you draw the Lines *LG*, *IH* ; these Lines will appear Parallels to the Line of the Plan. Then drawing the Line *LO*, so as to make the Angle *GLO* equal to the Angle *BLF*, the said *LO* shall tend directly to the Point of Sight *O* ; and serve for a visual Line.

In *P*, I suppose the Scenes *M* and *N* to lie one upon another on the Floor, and the two Lines *RT* to have the same Distance as the Lines *LI* ; and so of the others. Where you are to take Notice, that the Lines *RS*, *TV*, are the same with the Lines *LG*, *IH*, of the Scenes *E* : and that the Lines *RS*, *TV*, are not Parallels ; altho' *LG*, *IH*, seem to be so. Therefore, if you draw the Line *RL*, so that the Angles *SRL*, and *GLO*, be equal ; the Line *RL* shall serve as a Visual, and *L* shall be the accidental Point of Sight, for painting the Scenes of the Side *N* ; and the Lines *RS*, *TV*, shall be us'd as Parallels. What remains on the Frame, beyond those Lines, is to be reckon'd as nothing ; but you may paint there Air, or what you please. The accidental Point of Sight for painting the Scenes of the Side *M*, is *I*.

FIGURA Septuagesimasexta.

Modus delineandi exemplar scenarum.



TERUM delineavimus scenas erectas super tabulato; in B nudas, in A depictas, additis projecturis coronicum & aliorum ornamentorum. Deformatio scenarum A eruitur methodo consuetâ ex vestigio C, in quo videbis lineam plani deorsum protractam. Vestigium autem geometricum est in D.

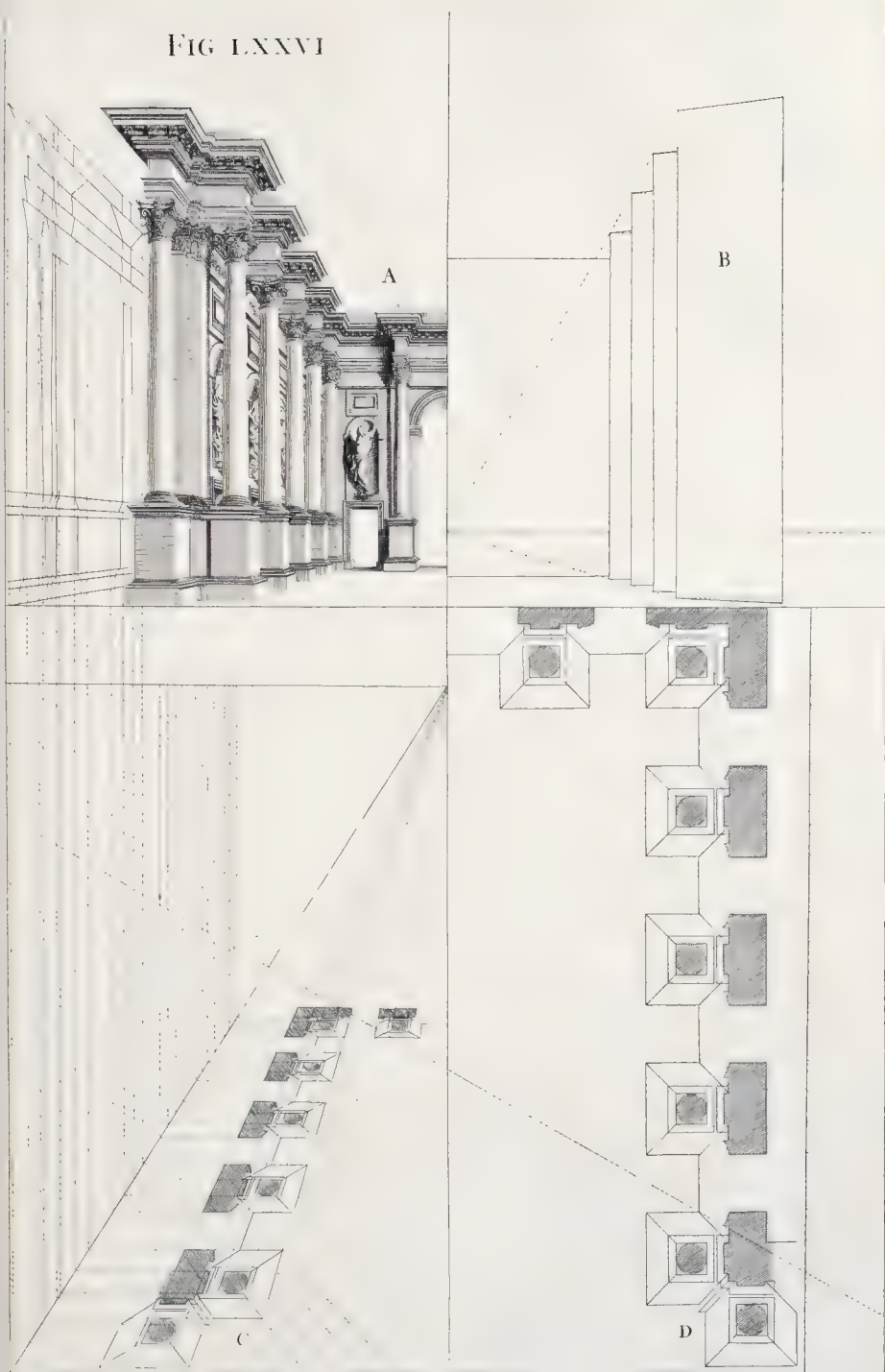
The Seventy-sixth FIGURE.

The Manner of delineating the Designs of Scenes.



*I*N this Plate you have another Design of Scenes erected on the Floor; the naked Scenes are B; the painted ones A; with the additional Projectures of Cornices and other Ornaments. The Draught of the Scenes A is produc'd from the Plan C, after the usual Manner; in which you may observe the Ground-line to be lower than its true place, for the greater Distinction of the Parallels. The Geometrical Plan is D.

FIG LXXVI



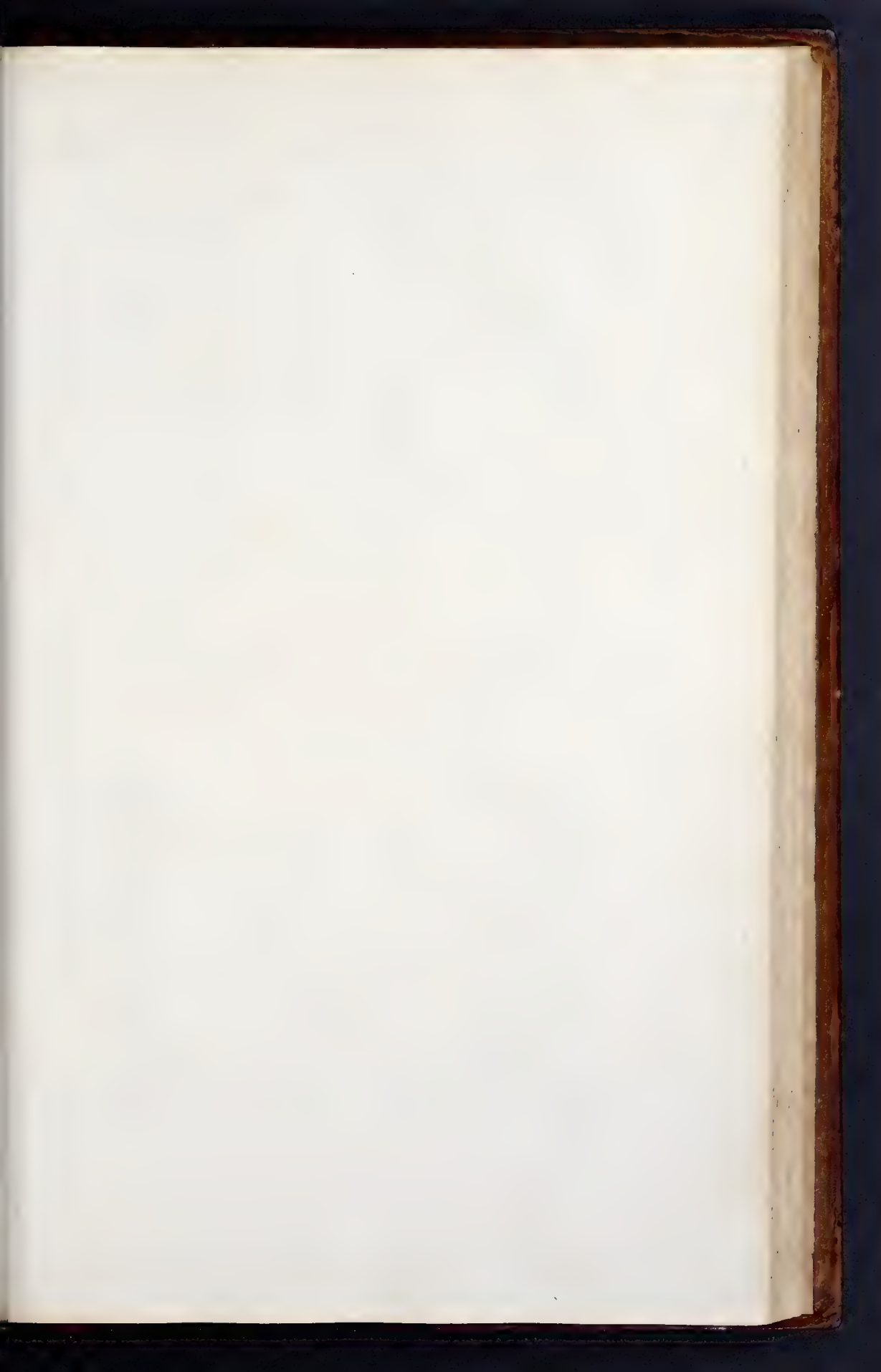


FIG. LXXVII.

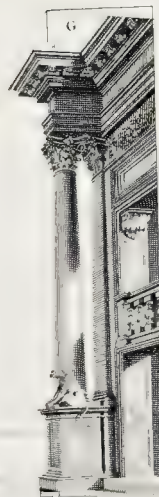
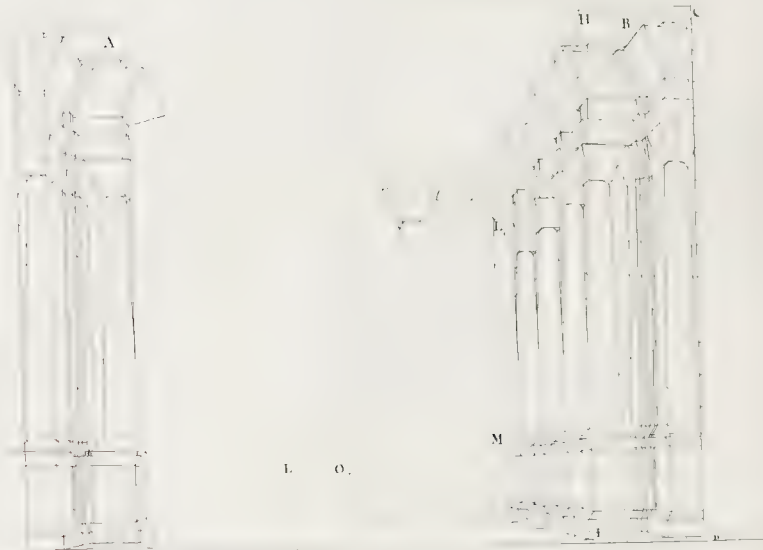


FIGURA Septuagesima septima.

Modus reticulandi & pingendi scenas theatri.



OSTQUAM in pavimento exactissime disposueris tum poscenium, tum ex ordine scenas reliquas, unam alteri incumbentem, ut figurâ septuagesimaquintâ declaravimus, fiet linea horizontalis, in qua notanda sunt tria puncta perspective, unum in O usui futurum in pingendo poscenio, ac duo reliqua hinc inde, singula videlicet pro scenis partis oppositæ. Jam supponendo quod in parvo exemplari A prima scenæ facta fuerit reticulatio per quadrata perfectâ; proportionalis divisio fiet tum in rectâ HI primæ scenæ B, tum in rectâ CD. Postea ex puncto E, per singula puncta divisionum rectæ HI, fient visuales, adhibendo funiculum colore nigro imbutum; earumque ope, ut figura ostendit, reticulare oportebit scenam B, tum remota ea scenam illi subiectam, & eodem modo aliam & aliam; ac demum per divisiones quas in rectâ LM faciunt visuales ex puncto E, absolvetur reticulatio poscenii, cujus quadrata esse debent perfectâ, secus quadrata scenarum. In parte inferiori paginae, duæ scenæ G & F ostendunt ornamenta quæ in scenis depingi possunt. Velim autem observes, tum lineas transversas cornicum, quæ non sunt invicem parallelæ, tum visuales, quæ tendunt ad puncta opposita. Nam ejusmodi lineæ continent duas peculiâres difficultates projectionum theatralium; easque ut superes, exactè servandæ sunt regulæ quas declaravimus.

do funiculum colore nigro imbutum; earumque ope, ut figura ostendit, reticulare oportebit scenam B, tum remota ea scenam illi subiectam, & eodem modo aliam & aliam; ac demum per divisiones quas in rectâ LM faciunt visuales ex puncto E, absolvetur reticulatio poscenii, cujus quadrata esse debent perfectâ, secus quadrata scenarum. In parte inferiori paginae, duæ scenæ G & F ostendunt ornamenta quæ in scenis depingi possunt. Velim autem observes, tum lineas transversas cornicum, quæ non sunt invicem parallelæ, tum visuales, quæ tendunt ad puncta opposita. Nam ejusmodi lineæ continent duas peculiâres difficultates projectionum theatralium; easque ut superes, exactè servandæ sunt regulæ quas declaravimus.

The Seventy-seventh FIGURE.

The Manner of making the Net-work or Squares, and painting the Scenes of Theaters.



FTER you have with great Exactness dispos'd the Poscene on the Pavement, and the others in order one upon another, as was mention'd in the Seventy-fifth Figure; draw the horizontal Line, and mark therein three Points of Sight: That in O, for the Use of the Poscene; and the Points on the Sides, for the Service of the opposite Scenes respectively. Then, supposing that the Net-work of the small Draught of the first Scene A, consists of perfect Squares; transport the same Divisions both on the Lines HI and CD of the first Scene B; and with a black Line strike the Visuals from the Point E, by the Points of the Divisions of HI; and

by the Help of those Visuals make the Net-work of the Scene B, as is done in the Figure. When that's done, lay it aside; and do the next in the same manner; and so of the others. Lastly, by the Divisions, which the Visuals from the Point E make on the Perpendicular LM, finish the Net-work on the Poscene, which consists of perfect Squares, though that of the Scenes does not. The two Scenes of the lower part of the Plate, G and F, shew what Diversity of Ornament the Painter may introduce. I would have you also take particular Notice, both of the transverse Lines of the Cornice, which are not Parallels to each other; and of the Visuals which are directed to their opposite Points: because in these two Particulars lies the greatest Difficulty of describing Theatrical Designs; for the surmounting which, it's absolutely necessary, that you carefully regard the Rules hitherto deliver'd.

FIGURA Septuagesimaoctava.

De projectionibus horizontalibus.



*U*EMADMODUM facilius est deformatio columnarum jacentium, quam columnarum erectarum; (nam lineæ quæ in istis sunt perpendiculares, in illis sunt visuales, ac nullus circulus amittit suam formam) ita projectiones horizontales, quas in laquearibus delineare necesse est, contra quam Pictores imaginantur, expeditiores & faciliores suis verticalibus, quas hucusque tractavimus. Nam ut stylobatæ & columnæ appareant erectæ, pingende sunt veluti jacentes.

Deformationes horizontales auspicamur à mutulis, quia columnæ ac stylobatæ identidem iis imponuntur, ut magis in prospectu sint. Ob diversitatem verò quam habet tatus mutuli à sua facie, utriusque delineationem geometricam seorsim in hac figura exhibemus.

The Seventy-eighth FIGURE.

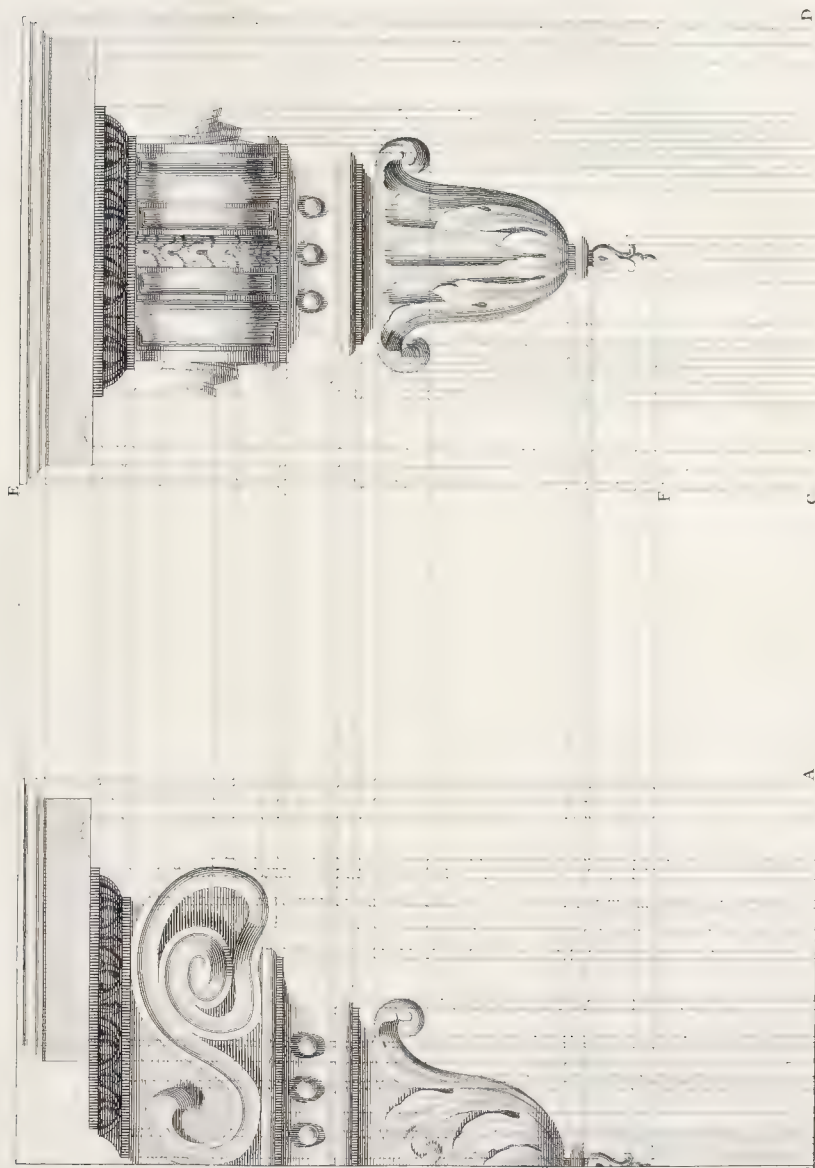
Of horizontal Perspective.



*I*S it is easier to describe in Perspective Columns lying on the ground, than those that are erect, (the Lines in these last being Perpendiculars, which in the former are Visuals, wherein no Circle loses its Form) so the horizontal Projections of Perspective, proper for Ceilings, contrary to the Judgment Painters usually make, are perform'd with more Ease and Expedition, than the vertical, which we have hitherto treated of; forasmuch as the Pedestals and Columns that must appear erect, are painted as if lying on the ground.

I have usher'd in these horizontal Designs with those of Corbels, because, for setting the Pedestals and Columns more in View, they generally seem to be supported by them. And the Side of this Corbel being different from its Face, I have here inserted a Geometrical Description of each distinct.

FIG. LXXVIII.



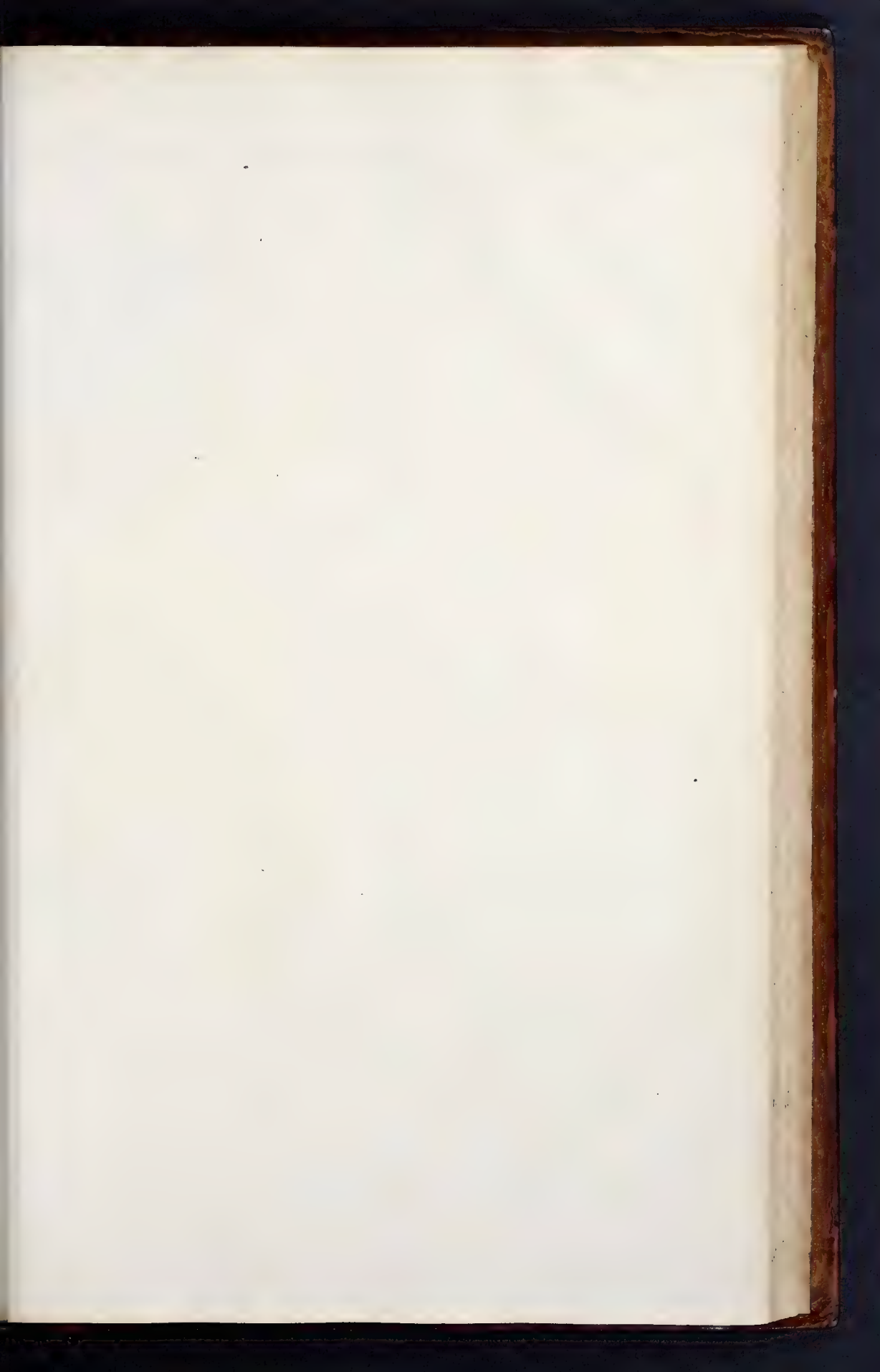


FIG. LXXIX.

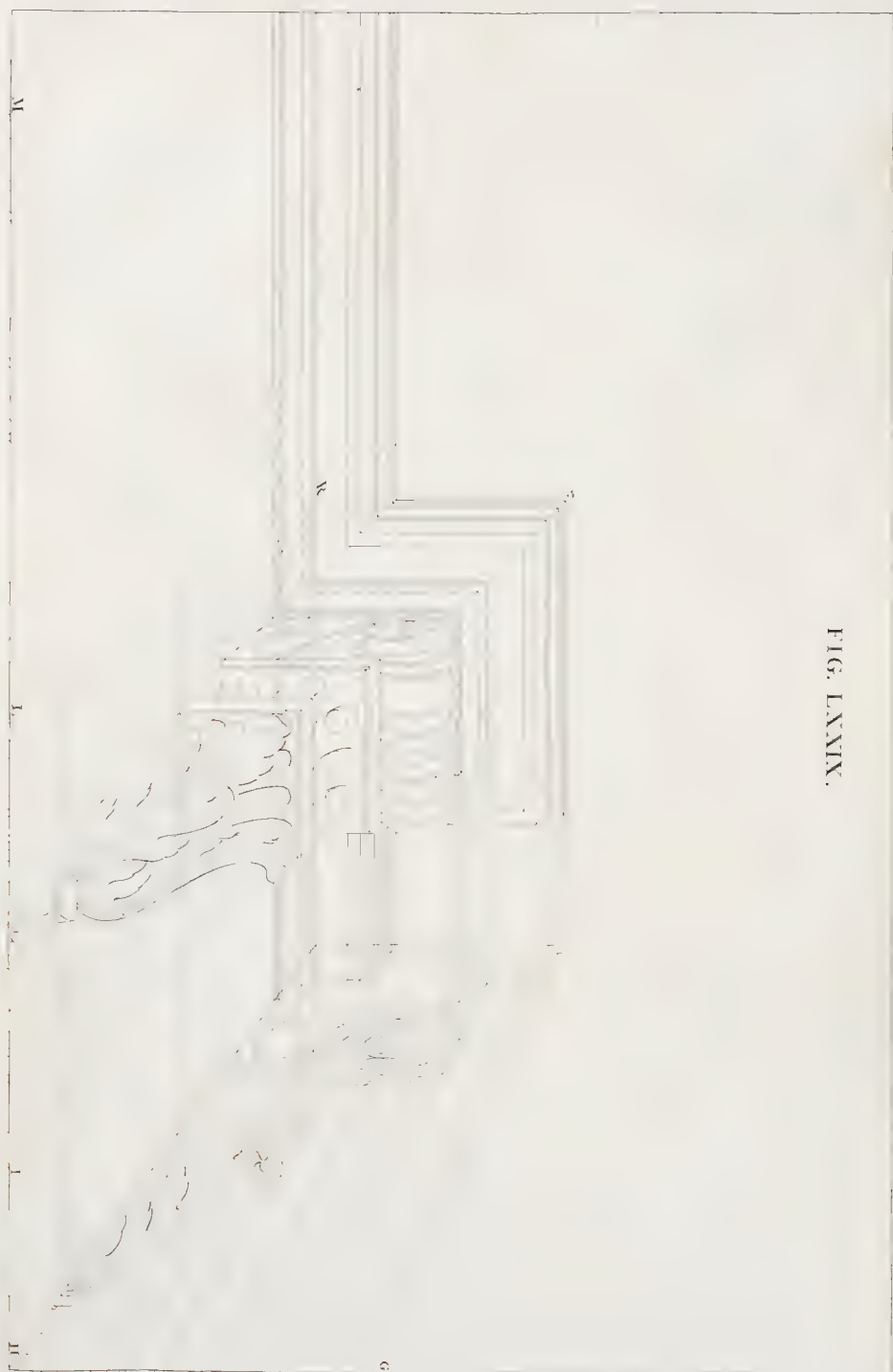


FIGURA Septuagesimanona.

Projectiones vestigii & elevationis mutuli.



ACIES mutuli quam delineavimus figurâ septuagesimoctavâ, gerit hic munus vestigii; latus verò gerit munus elevationis; ut ostendunt lineæ occultæ, quæ ex divisionibus faciei tendunt ad punctum oculi, ex divisionibus lateris tendunt ad punctum distantie (puncta oculi ac distantie in hac & sequentibus figuris cadunt extra paginam.) Per sectiones harum linearum ducuntur lineæ quæ terminant singulas partes vestigii deformati; hujusque adjumento ducitur elevatio lateris, ac methodo consuetâ latitudines & longitudines mutuli solidi eruuntur ex vestigio, altitudines ex elevatione. Hic & deinceps nomina longitudinis & al-

titudinis usurpamus, veluti planum cujuslibet perspective esset verticale; in quâ suppositione, IL esset latitudo mutuli, SR altitudo, RL longitudo: quum SR reverâ sit longitudo, RL altitudo. Ad faciliorem descriptionem hujus figuræ observandum est, rectis IL, LM, GH, hujus pagine inesse divisiones rectarum DC, FE, AB, figuræ septuagesimoctavæ.

The Seventy-ninth FIGURE.

The Plan and Elevation of a Corbel in Perspective.



THE Face of the Corbel describ'd in the Seventy-eighth Figure, in this does the Office of a Plan; and the Side serves here for the Elevation; as is plain from the occult Lines, which from the Divisions of the Face tend to the Point of Sight, and from those of the Side tend to the Point of Distance; both which Points, in this and the succeeding Figure, fall without the Plate. From the Intersections of these Lines are drawn others, that determine each Part of the Perspective-Plan; by means of which, the Elevation of the Side being also form'd, the Breadths and Lengths of

the solid Corbel are taken, as usual, from the Plan, and the Heights from the Elevation. Here and henceforward, the Terms of Length and Height are made use of, as though the Plan of each Perspective were vertical; according to which Supposition, IL is the Breadth of the Corbel, SR the Height, and RL the Length; whereas in reality SR is the Length, and RL the Height. For the more ready Description of this Figure you will do well to observe, that the Lines IL, LM, GH, of this Plate, bear the same Divisions as DC, FE, AB, of the Seventy-eighth Figure.

FIGURA OCTOGESIMA.

Horizontalis projectio mutuli inumbrati.



N hac figurâ suas umbras mutulo addidimus : eumque si in altum supra oculum elevaveris, & ex distantia quam ipsi dedimus suspexeris ; miraberis profecto, in alium longè concinniorrem subito mutatum fuisse.

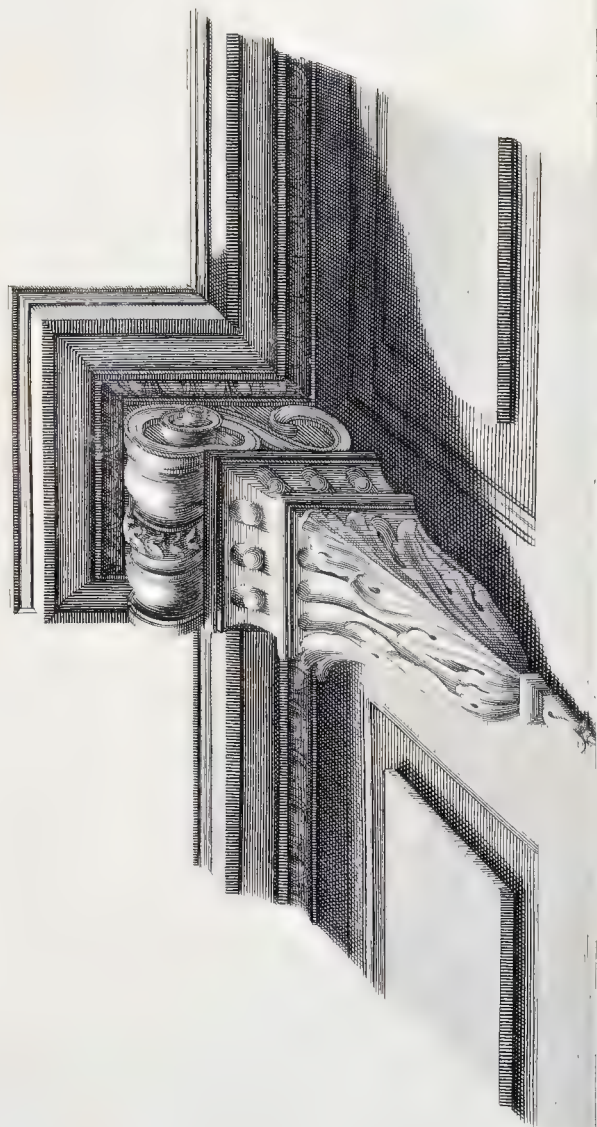
The EIGHTIETH FIGURE.

The Horizontal Projection of a shaded Corbel.



N this Figure you have the Corbel finish'd with its proper Shades ; which, if plac'd above the Eye, and beheld from the Distance here assign'd it ; you'll be strangely surpriz'd at the sudden and most agreeable Alteration you'll find therein.

FIG. LXXX.



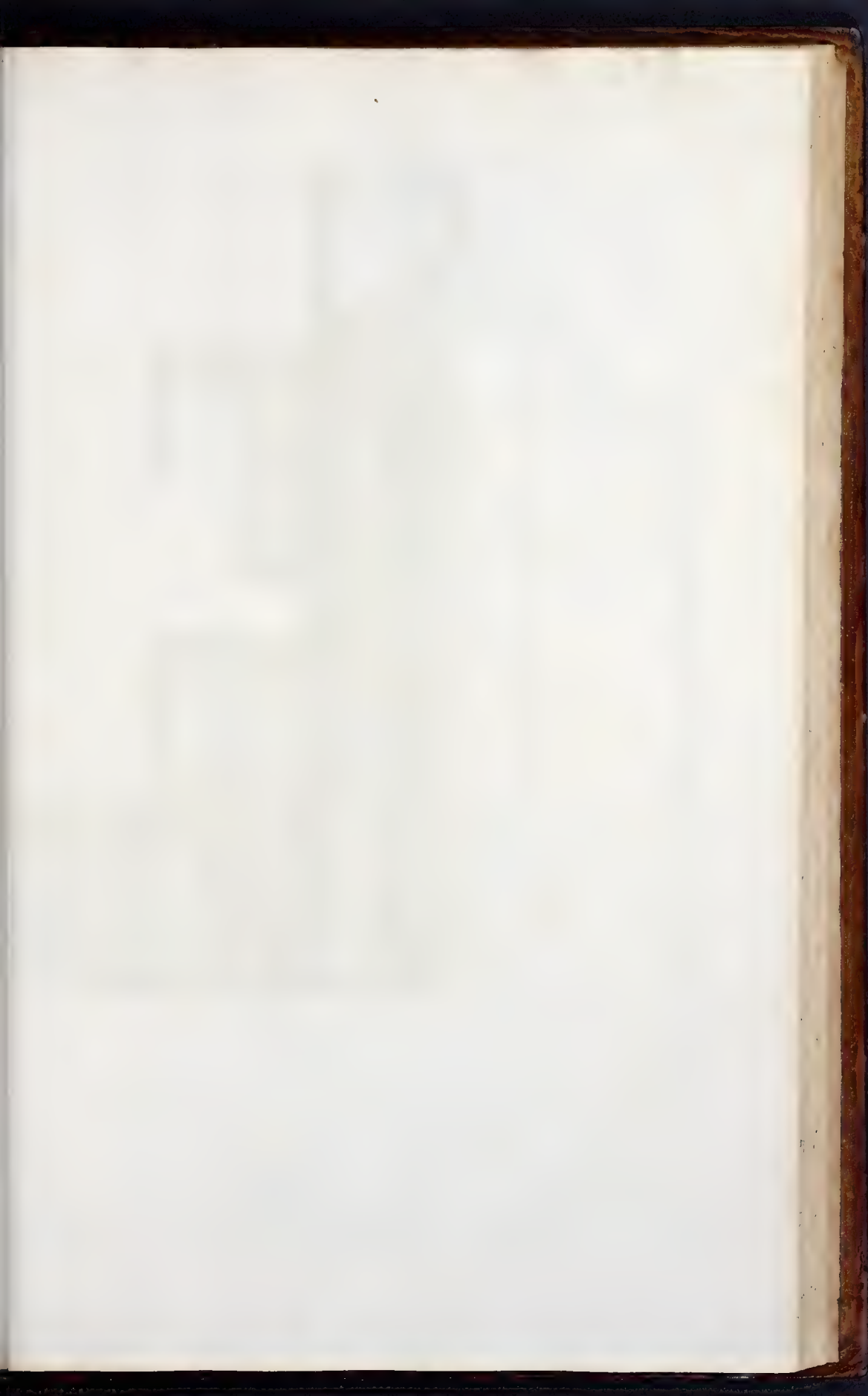


FIG. LXXXI.

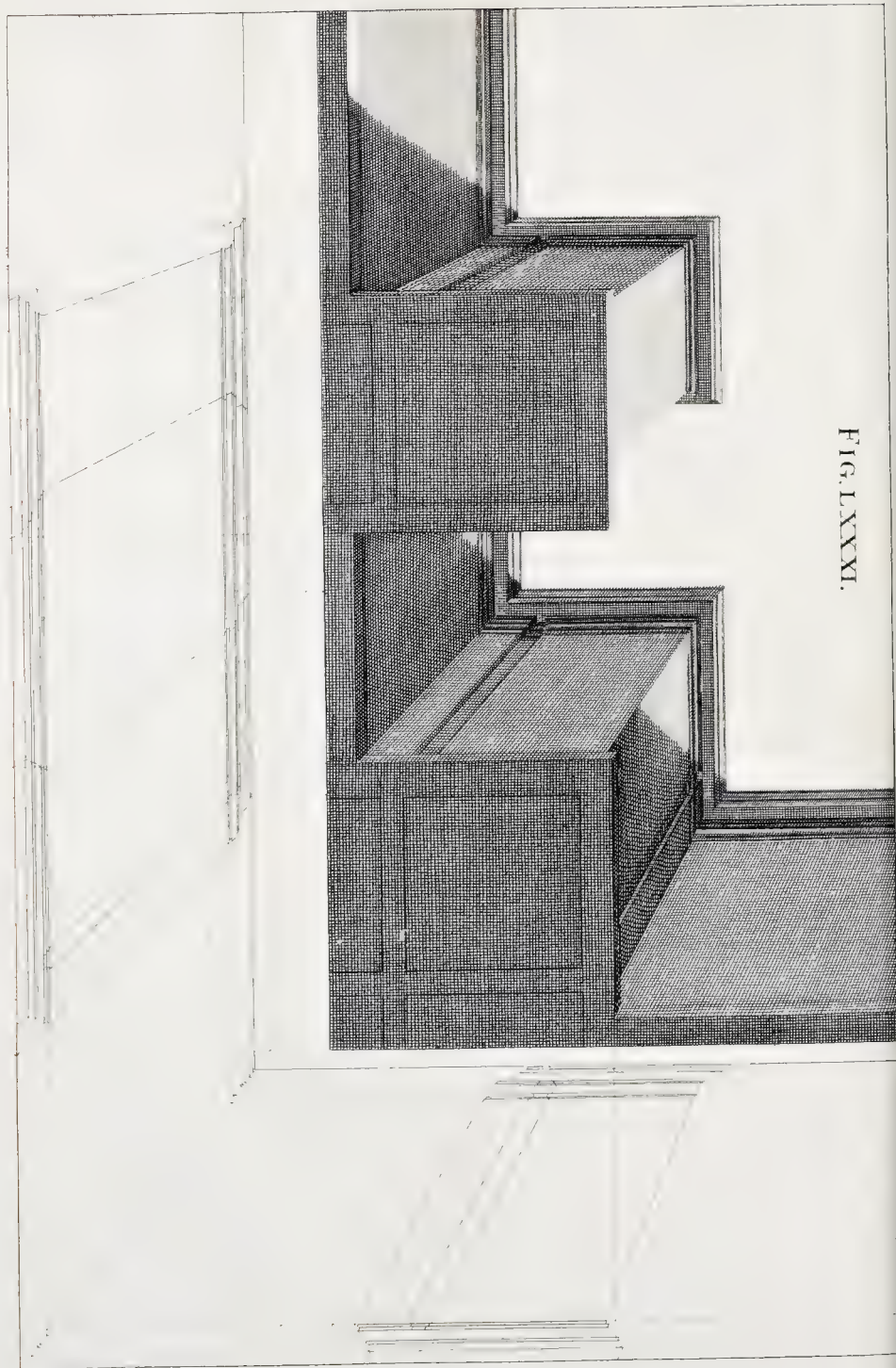
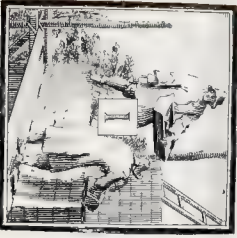


Figura Octogesima prima.

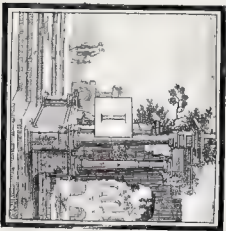
Stylobatæ Corinthii horizontaliter contracti.



N deformandis hîc Stylobatis, usi sumus projectione vestigiî & elevationis, quam exhibet figura duodecima; ut figuram illam cum istâ conferenti manifestissime constabit. Porro Stylobatas pingi solere incumbentes mutulis, diximus figurâ septuagesimâ dâ.

The Eighty-first Figure.

Corinthian Pedestals in an Horizontal Perspective.



N delineating these Pedestals, I have made use of the Plan and Upright put into Perspective in the Twelfth Figure; as will evidently appear, by comparing that Figure with this. I have already mention'd, in the Seventy-eighth Figure, that in painting these Pedestals, they are generally suppos'd to be upheld by Corbels.

Figura Octogef. secunda.

Columna Corinthia horizontaliter deformata.



*ESTIGIUM & elevatio styl-
batæ, quem delineavimus fi-
gurâ duodecimâ, suppediat
mensuras pilarum hoc loco
deformandarum, ut ex iis e-
ruatur contractio columnæ.*

*Hinc autem soli suas umbras addidimus, ut cla-
rius appareat modus & artificium totius opera-
tionis. Ex his vides, quadrata & circulos in
perspectivâ horizontali omnino retinere suam fi-
guram, eamque duntaxat restringi paulatim &
coarctari: quicquid in contrarium & verbis &
pennicillo docuerint Pictores nonnulli.*

Eighty-second FIGURE.

*A Corinthian Column in Horizontal
Perspective.*



THE Plan and Elevation of the Pedestal delineated in the Twelfth Figure, gives also the Measures for reducing these Pilasters into Perspective; from which the Contraction of the Column is taken. I have shadow'd only this last, that the Manner of the whole Work might be the more conspicuous. By this you see the Squares and Circles in Horizontal Perspective always retain their Figures, without any Alteration, save that of being gradually diminish'd and made less; notwithstanding what some Painters have taught and practis'd to the contrary.

FIG. LXXXII.

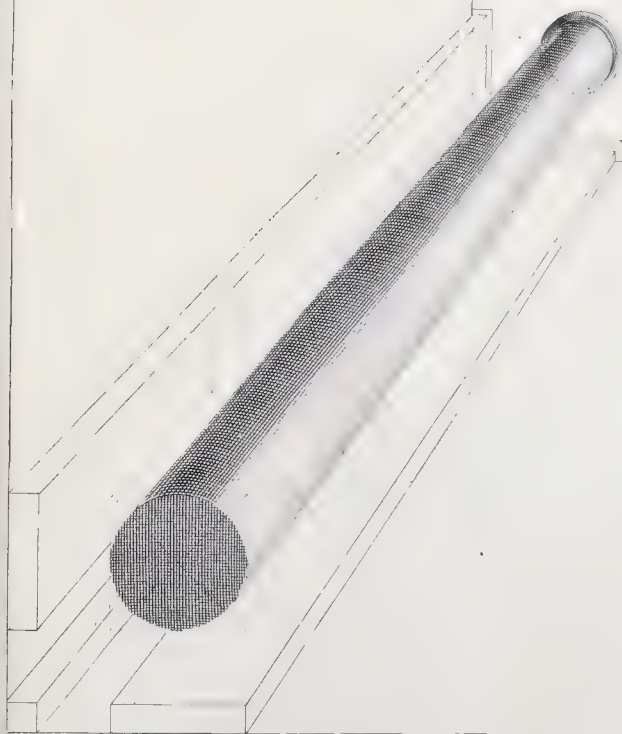




FIG. LXXXIII.

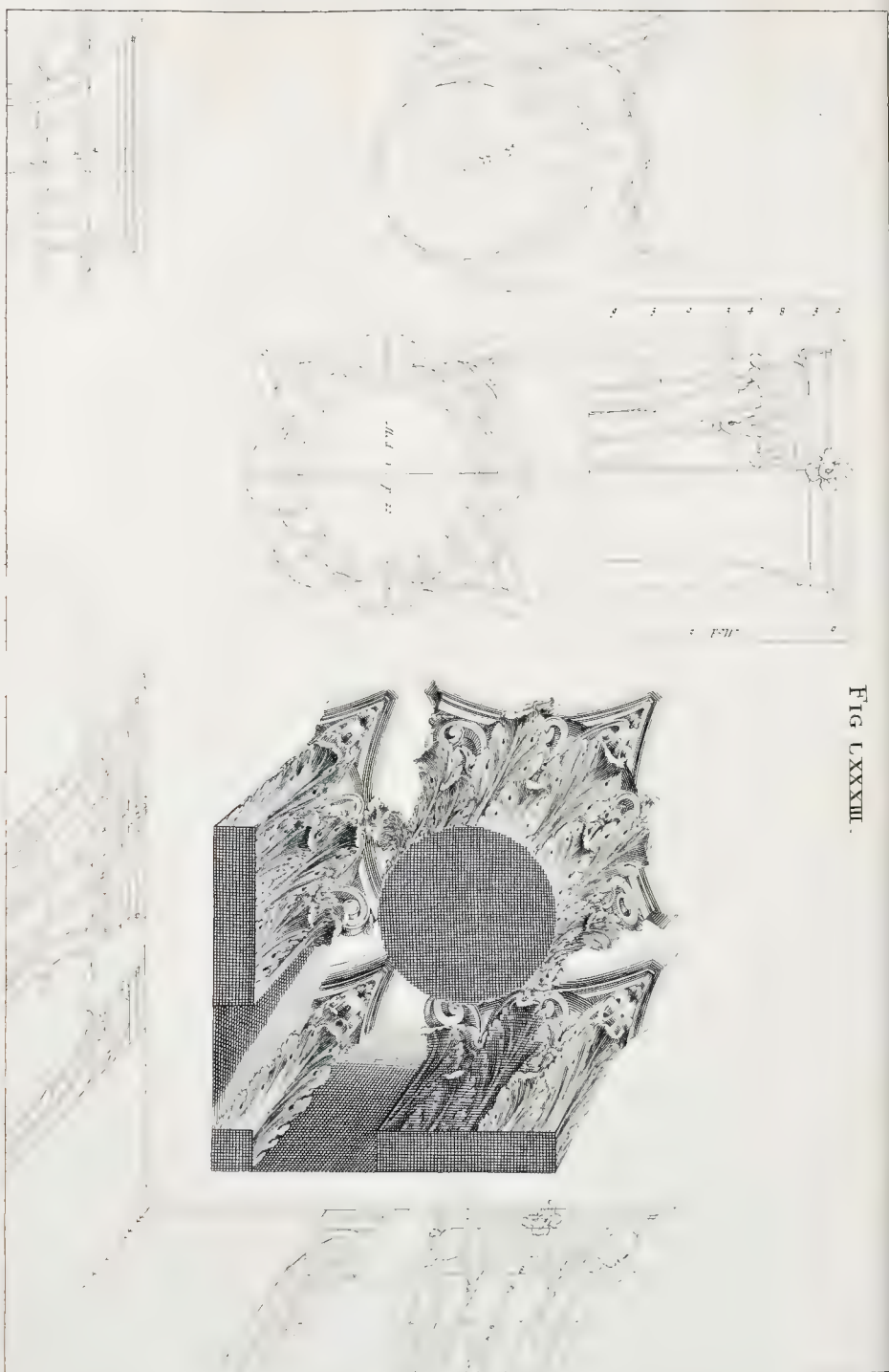
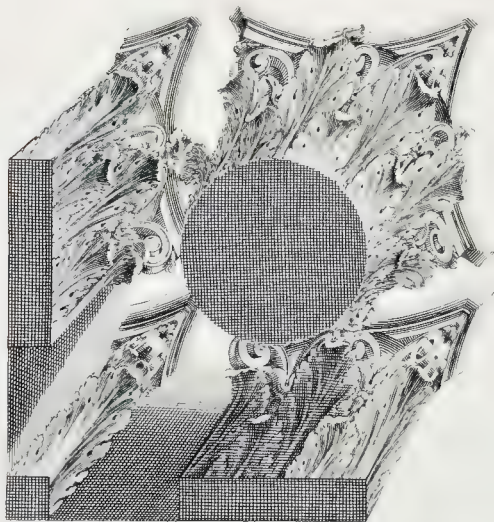


Figura Octogefimatertia.

Capitella Corinthia horizontaliter contracta.



ABES in hac paginâ deformationes vestigiū & elevationis capitelli Corinthii, quas desumpsimus ex delineationibus geometricis, transferendo mensuras earum in lineas planiusculas AC, ita ut facillimè digressi possit unde nascantur singule partes capitellorum mitorum. Nihil dubito quin deformationes horizontales sis experturus faciores verticalibus quas dedimus figurâ vigesimaquartâ. Nam in horizontalibus gyrus foliorum circulis clauditur, quorum centra mutantur latitudines à suis vestigiis in punctis 1, 2, 3, 4; altitudines verò à capitellis elevationis in punctis 5, 6, 7, 8.

Eighty-third FIGURE.

A Corinthian Capital horizontally contracted in Perspective.



OU have in this Plate the Perspective both of the Plan and Elevation of the Corinthian Capital, drawn from the Geometrical Descriptions, by transferring their Measures into the Ground-line A B, and into that of the Elevation A C; so that you may readily discover from whence every part of the finish'd Capital is produc'd. I don't doubt but you'll experience these horizontal Perspectives to be much less difficult than the vertical propos'd in the Twenty-fourth Figure. For in these the Circuit of the Leaves is determin'd by perfect Circles, whose Centers take their Breadths from the Plan at the Points 1, 2, 3, 4; and their Heights from the Capitals of the Elevation, at the Points 5, 6, 7, 8.

Figura Octogesimaquarta.

Coronix Corinthia.



I faciente sunt coronices que habent angulos, elevatio geometrica A representat non latius, alterum scilicet B. Coronix est autem, ut explicationes partium, quas fingere volumus incrementum coronis, non obstat concinne distributioni modulatorum. Ad contractionem elevationis A & sectionis B, in lineam plani EF & elevationis EG transferre oportet puncta diversarum latitudinum, quas habent in elevatione A inque epistylis, & coronæ, dicendo ex his lineis ad punctum oculi; in partem vero FH lineæ EF transferre oportet puncta longitudinum, dicendo lineas ad punctum distantie. Hac illustrata posuimus utramque deformationem, quarum una geret minus vestigiis, altera elevationis. Utrobique autem designabimus lineas terminandas partium coronicæ, ac sectionum C & D.

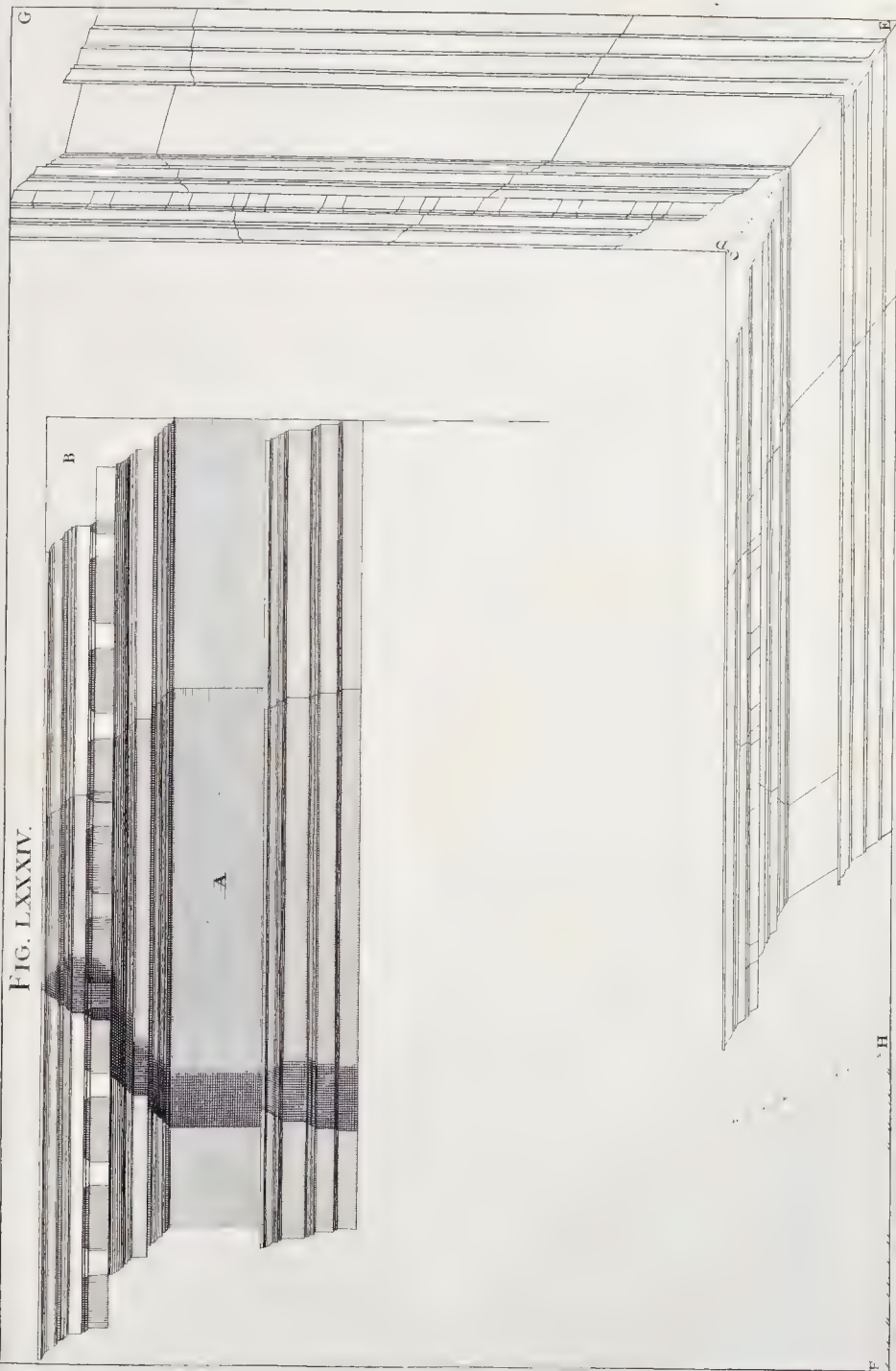
Eighty-fourth FIGURE.

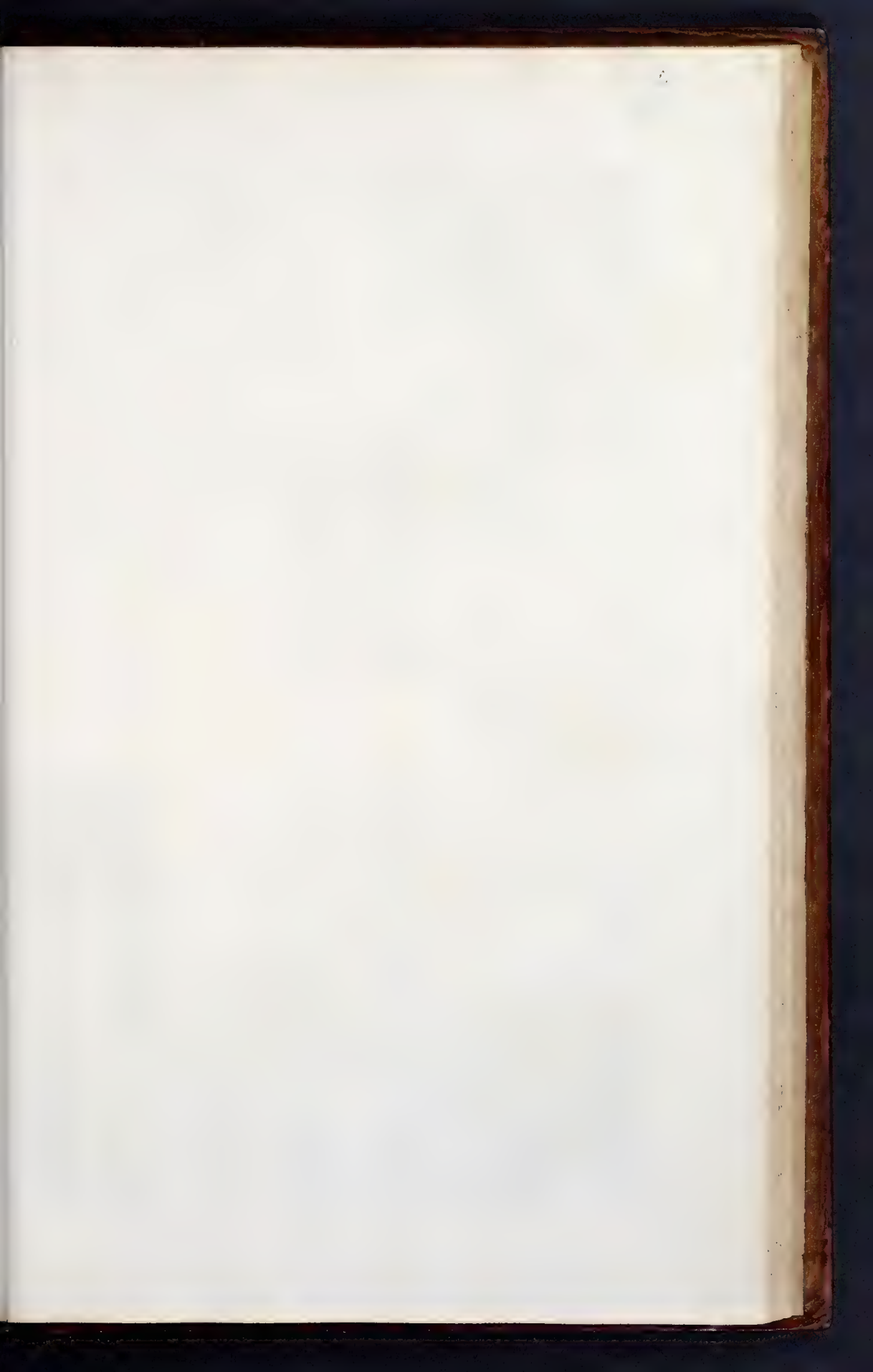
A Corinthian Cornice.



If you are to describe Cornices having Angles, admit the Elevation A to represent one Side, and the Section B the other. But Care is to be taken, that the Breaks of those Parts which are supposed to be set directly over the Columns, do not obstruct the regular Distribution of the Modillions. For contracting into Perspective the Elevation A, and the Section B, you must transfer into the Ground-line I F, and into that of the Elevation E G, the Points of the several Breadths made by the Projectures of the Architrave, Freeze, and Cornice of the Elevation A; and from them draw Lines to the Point of Sight: Then on the Part FH of the Line FE, you must note the Points of Length, and draw Lines from them to the Point of Distance. By this Practice you complete these two Contractions, one of which does the Office of a Plan, the other that of an Elevation. It's also requisite, that you draw the Out-line of the Members of the Cornice on each side the Angle, as the Sections C and D.

FIG. LXXIV.





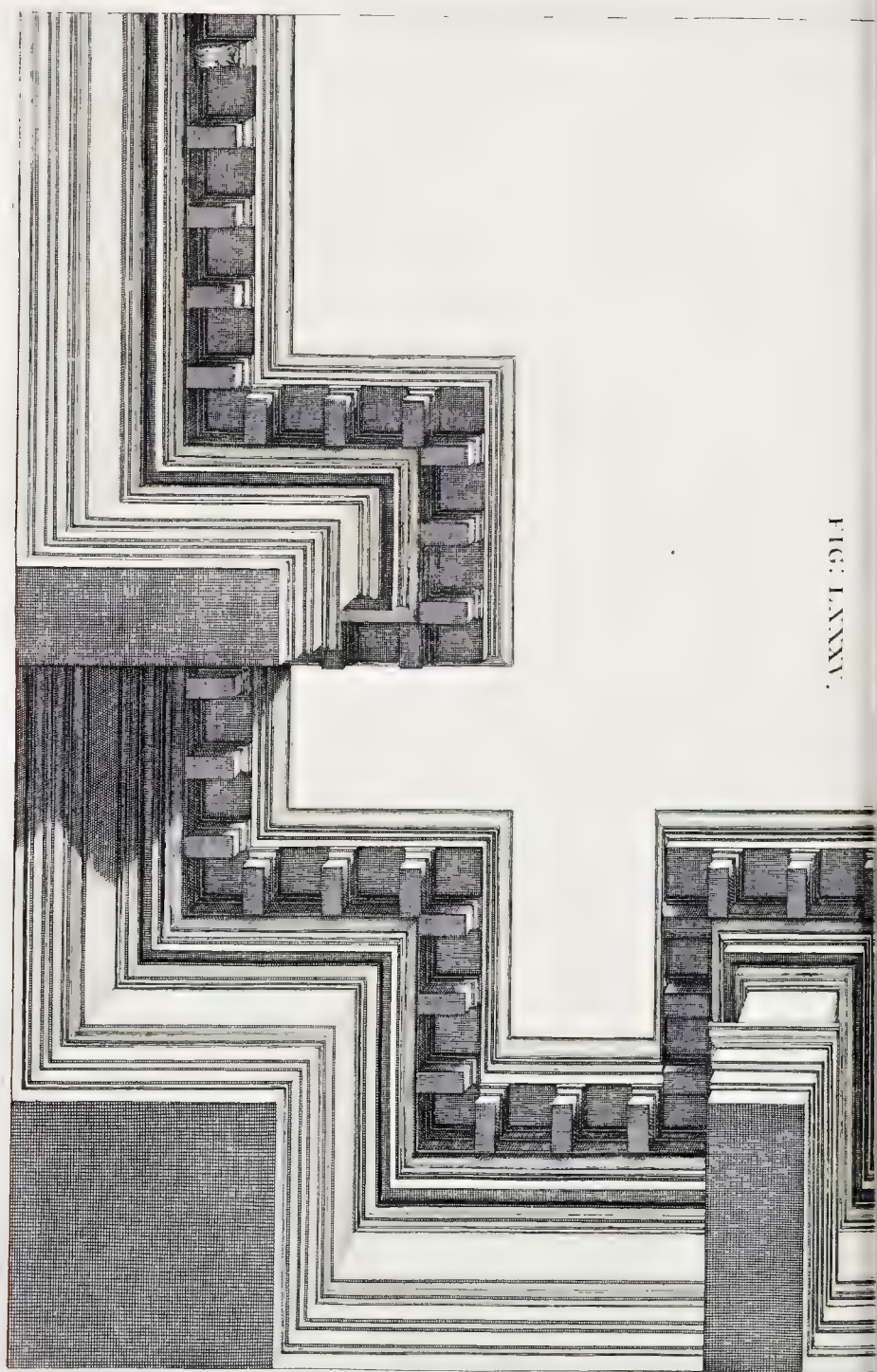


FIG. LXXXV.

Figura Octogesimaquinta.

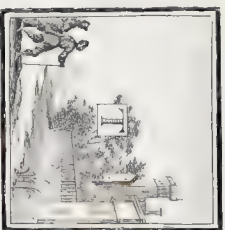
Coronix Corinthia horizontaliter contracta.



OLIDITAS coronicis cum omnibus projecturis cruta est ex vestigio & elevatione figure octogesimaquarte. Hic autem finem imponimus partibus rerum, ad integra edificia gradum facturi.

The Eighty-fifth Figure.

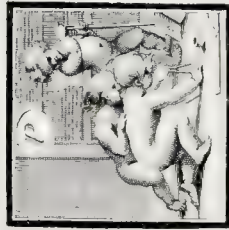
A Corinthian Cornice in Horizontal Perspective.



THE Solidity of this Cornice, with all its Projectures, is deduced from the Plan and Elevation of the foregoing Figure. With this therefore I shall conclude the Description of Parts of things, and proceed to that of entire Structures.

Figura Octogesima sexta.

Horizontalis projectio columnæ.



OSTQUAM sigillatim descriptimus maculam, stylolatam, columnam & coronam, omnia ista coniungere placuit: ita clarum appareret quomodo disponere oporteat delineationes geometricas, ut ex ipsis emanant projectiones horizontales.

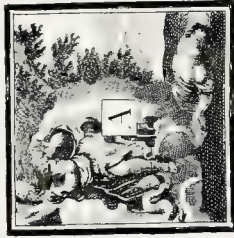
Linea plani est CD, perpendicularis CI. In

Conjunctio columnarum delineari veluti jacentem hinc.) In B ejus vestigium geometricum, cum directionibus latitudinis in lineâ ER. Puncta longitudinis transferantur in lineam plani CG, puncta altitudinis EC transferantur in CF, ducendo rectas ex directionibus CG ad punctum distante, ex directionibus CF ad punctum oculi. Per sectiones vero visuales CO eriguntur perpendiculara, & completitur elevatio H, ex qua eruitur columna nitida L.

Si super vestigio M formare placeat aliam columnam, ejus latitudines accipienda sunt ex columna B; ac sectio projicienda est in N, ut ex hac tangamur ex elevatione evanatur columna P. Si aliam columnam in angulo addere libitum fuerit, ope sectionum HN faciliè illam complebis.

The Eighty-sixth Figure.

A Column in horizontal Perspective.



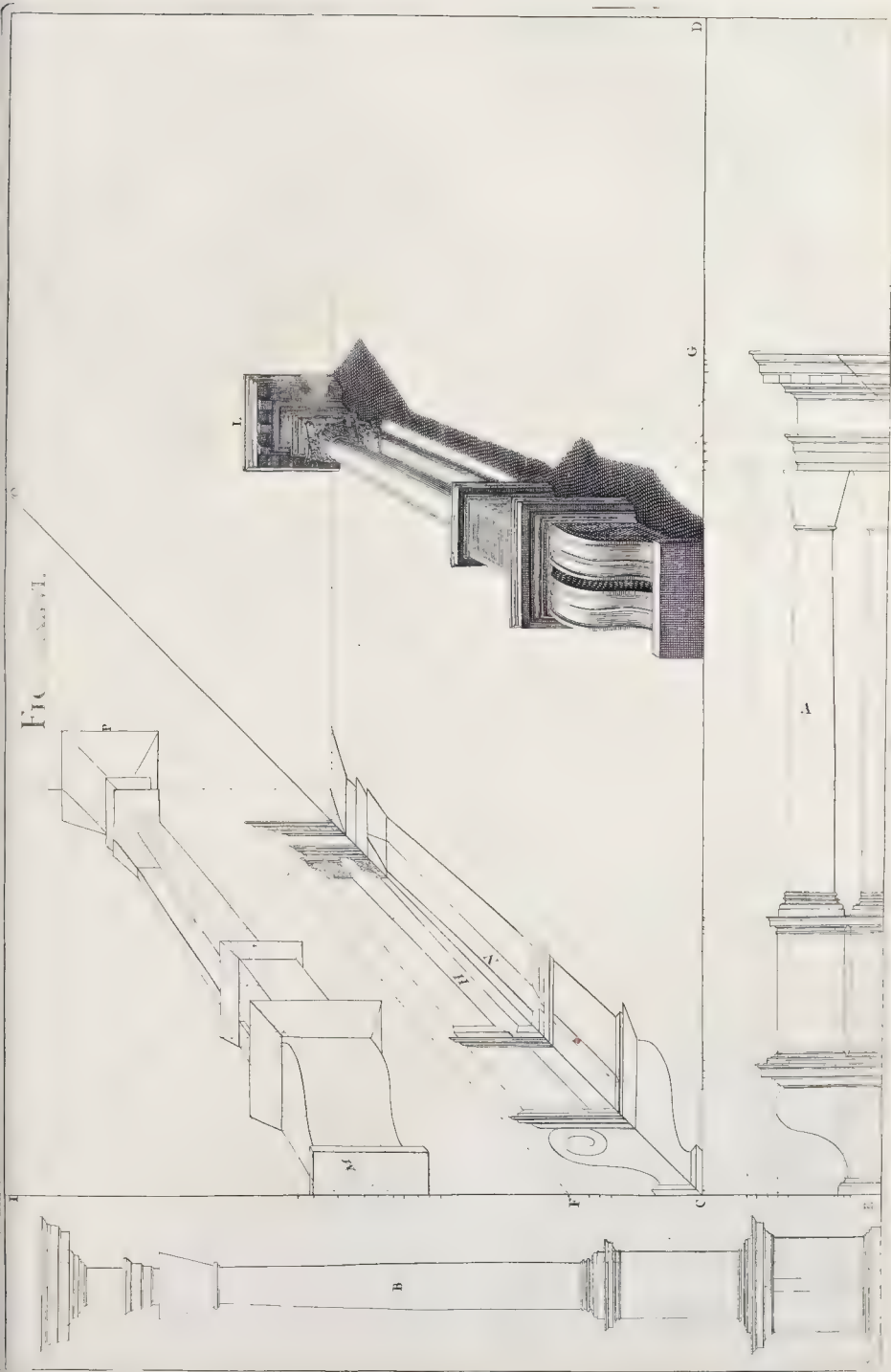
AFTER the separate Description of a Corbel, Pedestal, Column, and Cornice; I have here conjoin'd them all, that you might the better perceive how to dispose Geometrical Elevations for the Beauties of horizontal Perspective.

The Line of the Plan is CD, the Perpendicular CI; the Geometrical Elevation of the Length of the Column, suppos'd to be lying

on the Ground, is A. The Geometrical Plan thereof is B, with the Divisions of its Breadth on the Line E R. The Points of Length being transferr'd on the Line of the Plan C G, and the Points of Height E C to C F; from the Divisions of C G Lines are drawn to the Point of Distance; and from those of C F to the Point of Sight. From the Sections of the Visual C O, Perpendiculars are erected, and the Elevation H completed: from whence is taken the fifth'd Column L.

If upon the Plan M you would delineate another Column, the Breadth thereof must be taken from the Column B, and another Profile design'd in N, which serves as an Elevation for making the Column P. If another Column were requir'd in the Angle, the Profiles H N affit you in the ready Performance thereof.

Fig. 1.



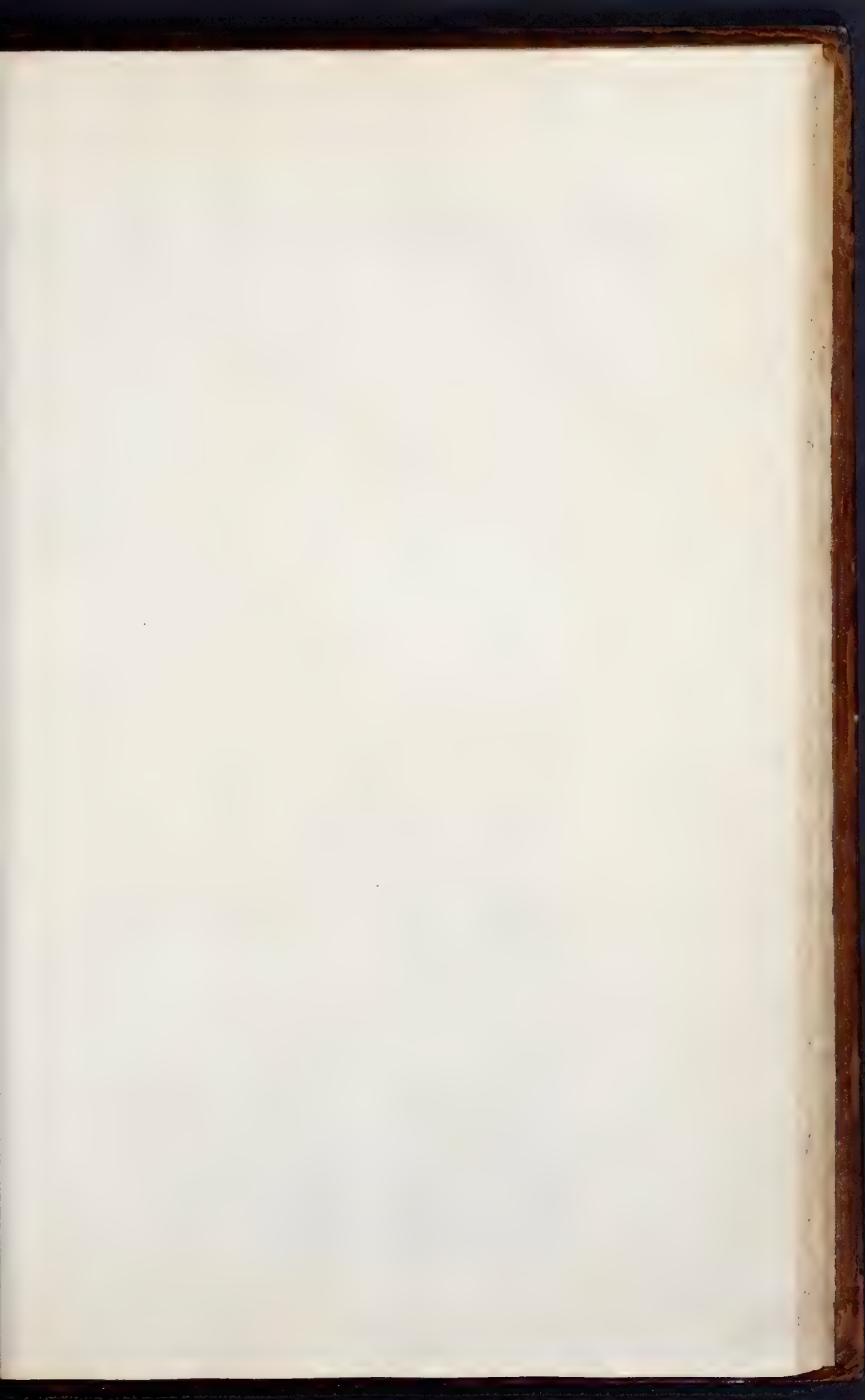


FIG. LXXXVII.

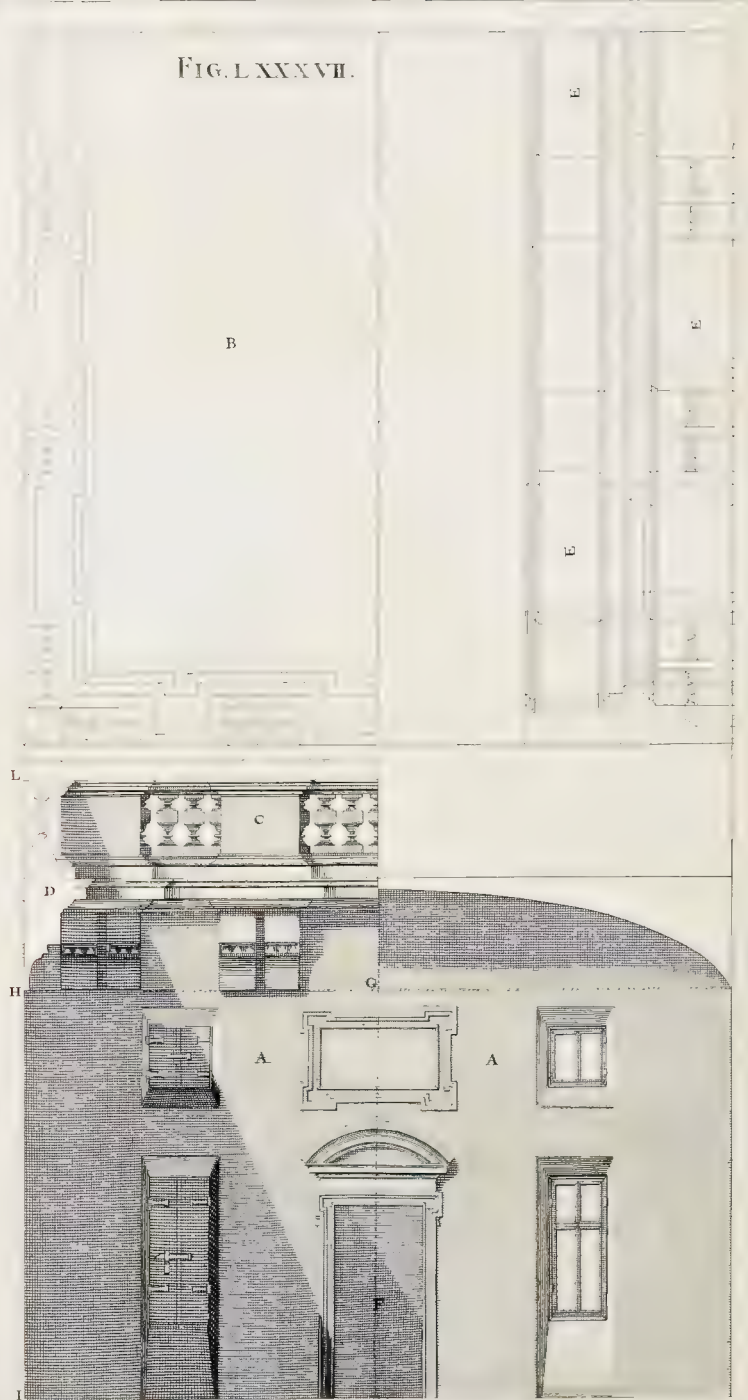


FIGURA Octogesima septima.

Præparatio necessaria ad sequentem figuram, & ad projectiones horizontales in laquearibus vel testudinibus.



EXHIBET hæc figura in A A unum ex quatuor parietibus aula, cujus altitudinem veram I H velis attollere apparenter usque in L, pingendo in laqueari, vel in testudine, seriem balaustrorum. In B est vestigium geometricum quartæ partis laquearæ. In C habetur elevatio medietatis latitudinis. In D est sectio cornicis & mutulorum. In E posita est elevatio medietatis longitudinis. In F est punctum oculi, in G punctum distantie: adeoque tota distantia est G F.

The Eighty-seventh FIGURE.

The Preparation necessary to the following Figure, and to all other horizontal Perspectives, whether on flat or vaulted Ceilings.



THE Figure A A represents one of the four Walls of a Hall, whose true Height I H you would have appear rais'd to L, by painting a Ballustrade in the Ceiling thereof. B is the Geometrical Plan of the fourth part of the said Ceiling; C is the Elevation of half the Breadth; D is the Section of the Cornice and Corbels; E is the Elevation of half the Length. In F is the Point of Sight, in G the Point of Distance; so that the Distance itself is F G.

Figura Octogesima octava.

Horizontalis projectio balaustrorum figuræ octogesima septimæ, cum brevi distantia.



LARGITATIS gratiâ totum laquear divisum est in quatuor partes. Prima continet contractionem vestigiæ & elevationis, quæ perficiuntur methæo constructa. Nam linea AOV est horizontalis, BC est linea plani. Punctum oculi est O, distante E. Secunda pars continet sectionem L, quæ dat projectioris mutulorum altitudinemque partium, desonatas ex sectione D figuræ octogesima septimæ, deformando eam in angulis B & C. Tertia pars complectitur delineationem integram sine umbra: ultima pars eandem complectitur cum umbra.

Ob punctum distantie parum remotum à puncto oculi, minimam amplitudinem ac deformem apparentiam habere videtur hæc delineatio. Nihilominus, si ex distantia EO figuram suspexeris, omnis deformitas evanescet.

Ut focus imperitis fiat, indestrui Pictores interest parare sibi genium exemplar suorum Operum, in quibus distantia sit nimis brevis; nam videlicet palam ostendendum, in quo punctum distantie sit remotum à puncto oculi, quantum necesse est ad vitandam omnem deformationem. Alterum verò, in ipsorum Opere clare insinuantium.

Si pingendæ sint testudines, oportet prius facere in eis reticulatorem peculiarium; quæ quia difficilis est, & parca explicari nequit, in aliud Opus referatur.

Eighty-eighth Figure.

The horizontal Projection of the Balustrade of the Eighty-seventh Figure, view'd at a small Distance.



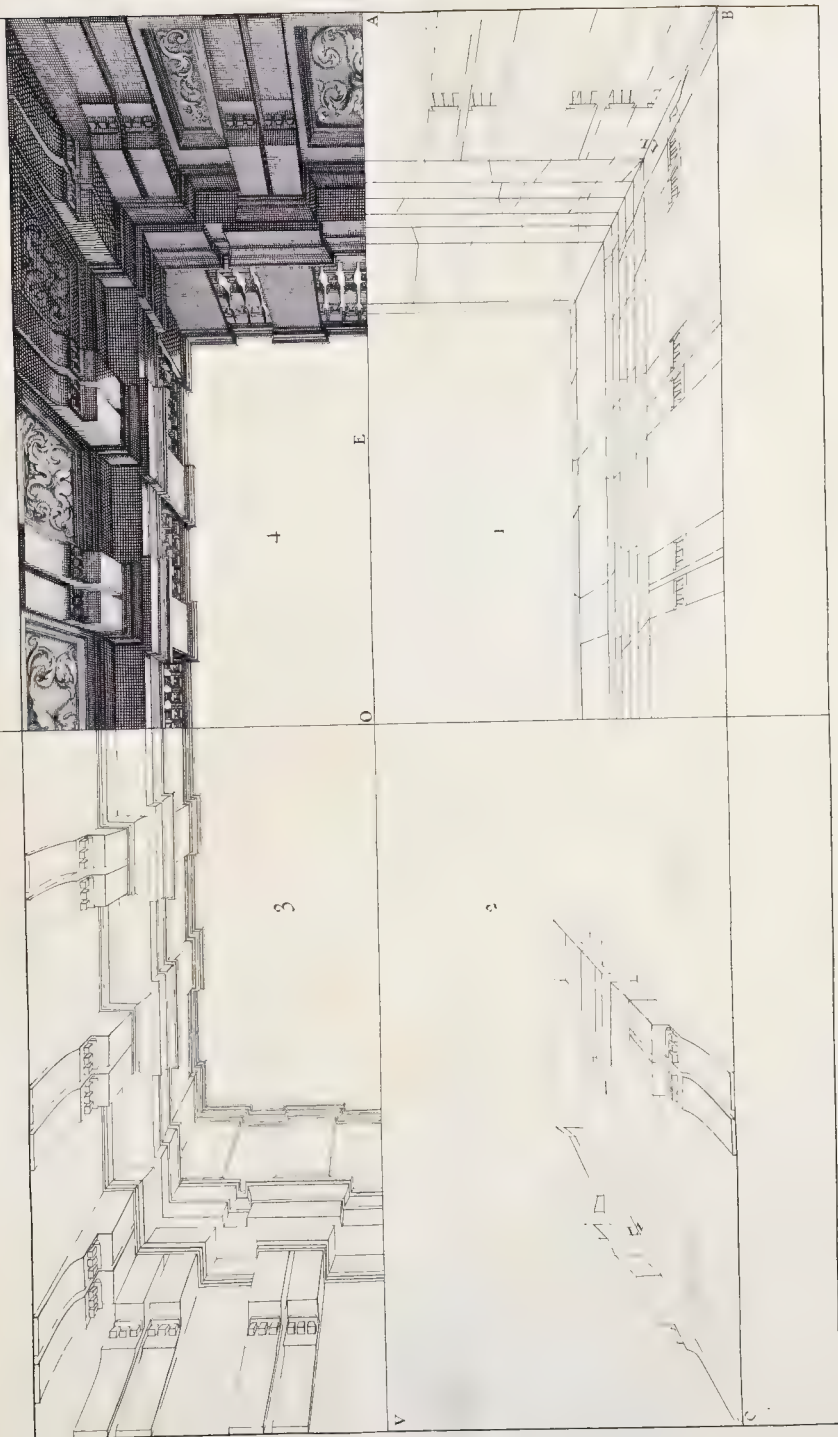
OR the better Illustration of this Figure, I have divided the whole Ceiling into Four Parts. The first contains the Plan and Elevation in Perspective, after the usual manner; AOV being the horizontal Line, BC that of the Plan; the Point of Sight O, and that of Distance E. The second Part contains the Section L, which gives the Projectures of the Corbels and other Parts taken from the Section D of the Eighty-seventh Figure, by drawing it in the Angles B and C. The third Part comprehends the Delineation of the Perspective without Shadows. The fourth Part contains the same wholly shadow'd and finish'd.

Through the near Approach of the Point of Distance to the Point of Sight, you may perhaps imagine this Draught will appear too wide, and so have an ill Effect: But when once you view it from its due Distance EO, you will find all such Doubts vanish and come to nothing.

When you have to deal with Persons unskill'd in these things, and are to paint for so small a Distance; your best way is to make two Draughts; one for publick Shew, in which you may place the Point of Distance so far from the Point of Sight, as is necessary for preventing Deformity; and the other you may privately make use of in performing your Work.

If you are to paint arch'd or vaulted Ceilings, a particular kind of Net or Lattice-work must first be made therein; the Performance whereof being difficult, and not capable of being explain'd in few words, I have refer'd it for another Volume.

FIG. LXXXVIII.



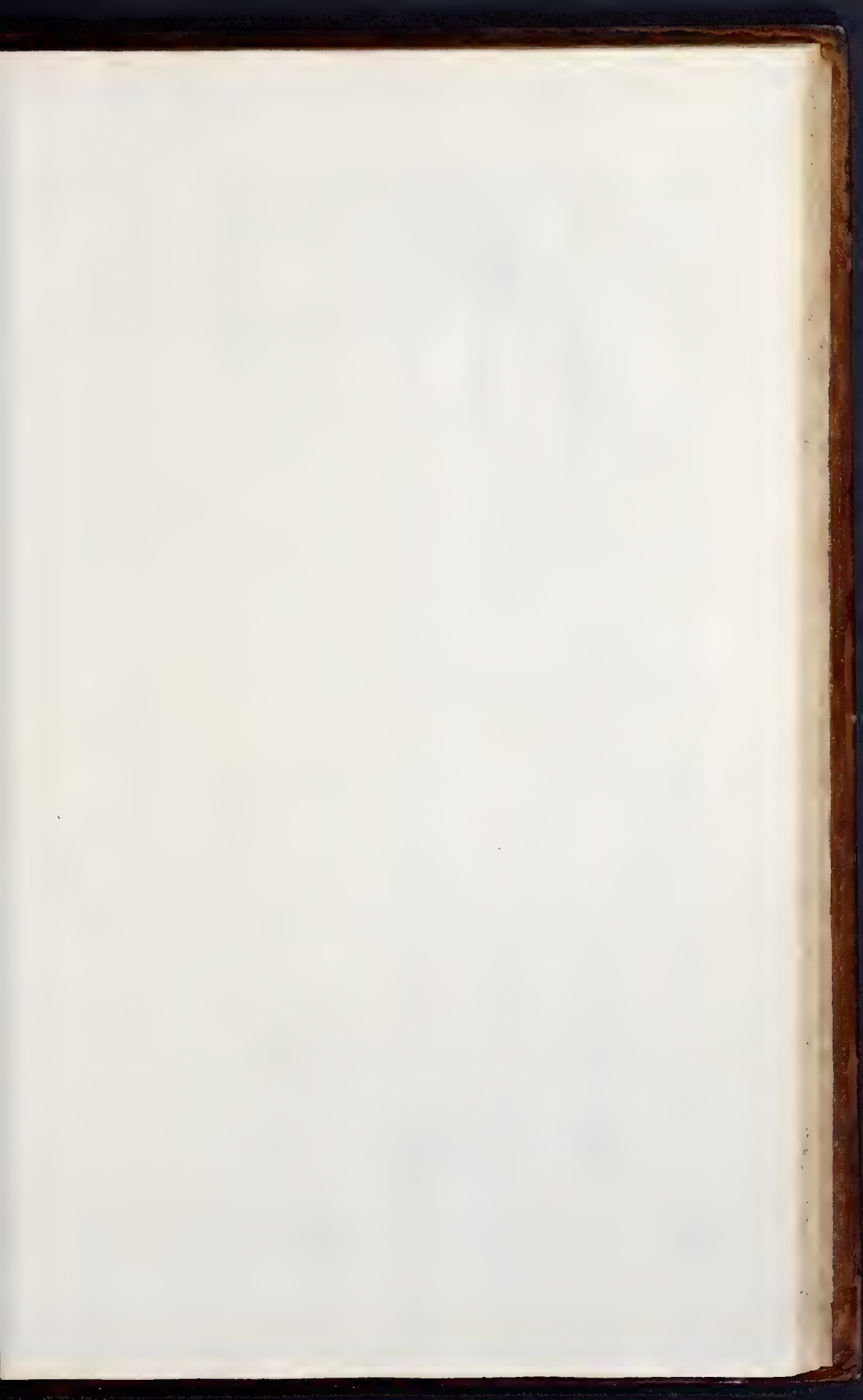


FIG. I. XXXIX.

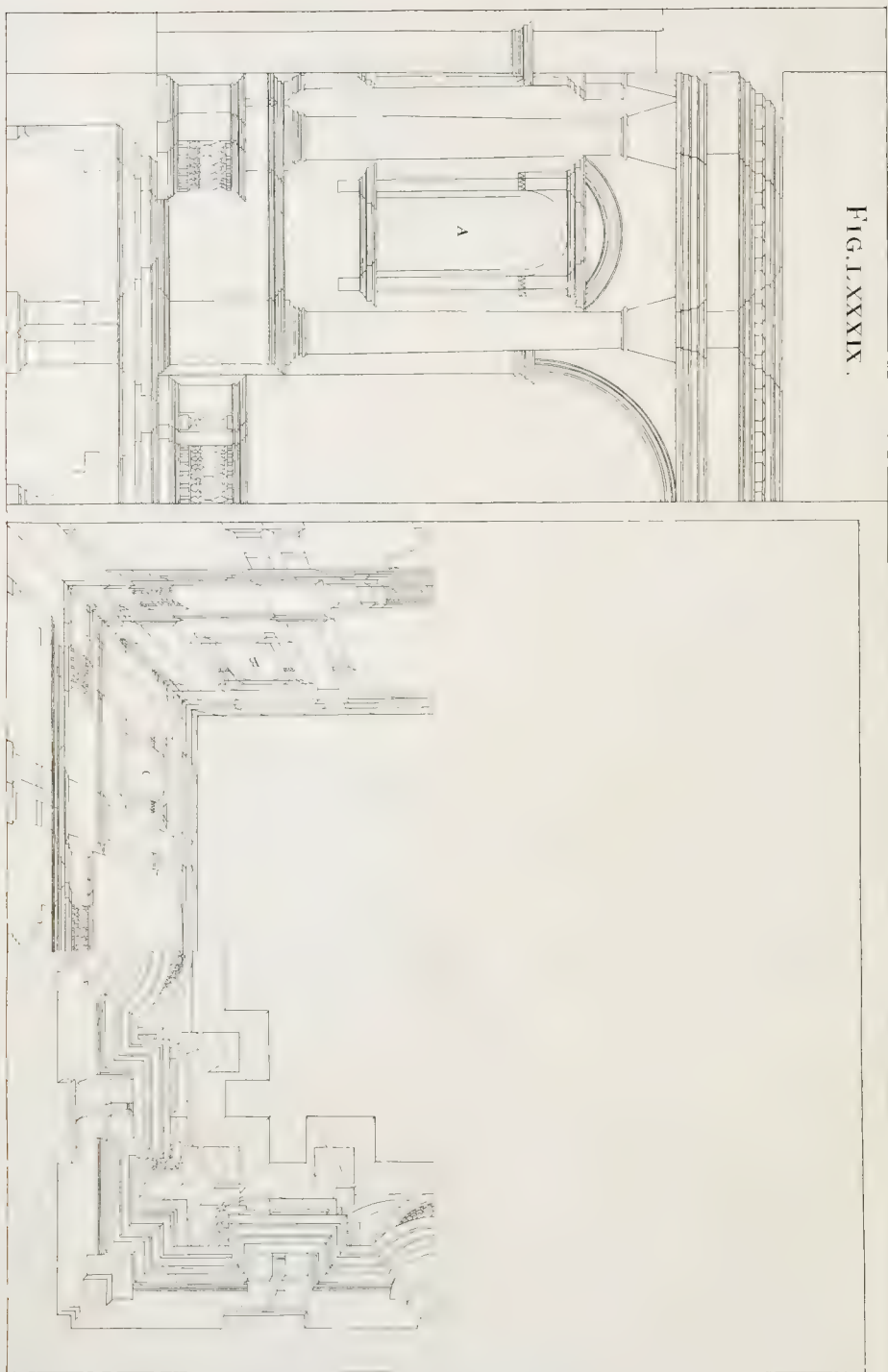


Figura Octogesima nona.

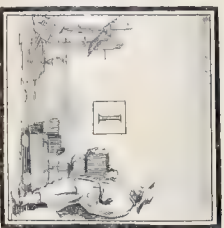
Horizontalis projectio architecturæ
in laqueari quadrato.



I laquear sit quadratum, & valde distans ab oculo, architecturam huic similem in eo depingere licebit. A est elevatio geometrica; eadem vero deformata in B & C, gerit minus vestigii & elevationis. Medietas unius ex quatuor partibus, usui esse potest in toto opere, aut premendo chartam, aut eâ perforatâ, immitiendo per foramina carbonem minutissimè contusum.

Eighty-ninth FIGURE.

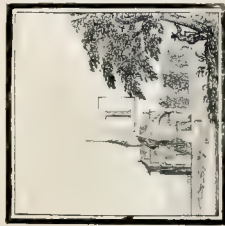
*An horizontal Projection of Architecture
in a square Ceiling.*



F the Ceiling be square, and very remote from the Eye, you may paint in it some such Piece of Architecture as this. A is the geometrical Elevation; the same reduced into Perspective in B and C does the Office of a Plan and Elevation. The Half of one of the four Parts may suffice for the Draught of the whole Work, either by tracing over the Lines of the Paper, or by pricking small Holes therein, and pouncing them through with Charcole finely powderd.

FIGURA Nonagesima.

Horizontalis projectio tholi.



NATURALI huius rei fuit a vestigio geometrico, in quo due circuli circum aliquam velamur: alio hinc aliquam velamur, ac projecturae & anguli huius & consuevit. In a plani est AB, horizontalis CD, perpendicularis AD. Punctum oculi est O, distantia D: atque si non huius de- let habere supra oculum altitudinem DO. Punctum oculi polum fuit extra ipsum thesaurum, ut qui cum a tranti- mentis d' fitebantur, ac pua agerant de habitatione & de artificio: factis vero contraxerit si tranti-entur in H & AG lineae AD, centrum I & cetera transierit in H & ex omnibus his punctis fient visuales ad O. Puncta distantia the- saurum, tum ipsius, tum laterne, translati in lineam AB, a puncto distantia thesauri ad punctum distantia D. Cuius autem his fient: stat in AO, in quo perpendiculari, quorum (ellipses cum visuali HO adiant centri pro focis) erunt. Inter visuales AG duae sunt lineae nominatae columnarum & cornices, quarum intercentra sunt in ex colli- quenda, si est electio geometrica. Hoc fuit, accedens, si est in unum ipsum efficitur, si est in perpendiculari EO centri epe perpendiculari HI, I N & in perpendiculari IM fuit circulus NV pro linea conuoluta: secundum ST in circulo QR, & in d' rati- onem lo autem per rectos ex angulis visuales ad punctum oculi, habentem angulos conuoluti, effluent numeri 1, 2, 3, 4: lineae vero laterales angulorum trahant ad punctum circum- larum, ut cadere est in N 3, 4. In vestigio, ne omnino capere, matris continui.

Ex his patet necessitas laterali vestigio geometrico, ut non sufficit a visi- cium unius columnae, quam singulae particulari rectum determinat. Quam autem Opus ipsum d' lineandum ac progrediam fuit, ipsum autem non potuit ex parte exemplari, spe- ratiulationis: Quinimo suis lecti duere oportet lineas & angulos, & per hoc & ad omnium circulothum. Figendo autem punctulum in singulis columnis, & hinc ad punctum oculum, & omnes circumferentias.

The Ninetieth Figure.

A Cupola in horizontal Perspective.



N the Execution of this Work, you are to begin with the Geometrical Plan; in which the two Ranges of Circles denote the Columns, the other Lines show the Pedestals, with the Projections and Breaks of the Balcs and Cornices. The Line of the Plan is AB, that of the Horizon CD, the perpendicular Line is AD. The Point of Sight is O, that of Distance D: wherefore this Figure ought to be plac'd as much above the Eye, as the Height DO. I have set the Point of Sight something without the Cupola, that the Eye might be less weary'd in viewing the Work, and embrace more of the Architecture, than it could have done, had the Point of Sight been in the midst. The Points of the Line EF are transferr'd into AG, part of the Line AD. The Center of the Plan I is continu'd to H, and from all these Points visual Lines are drawn to O. Then placing the Heights of every part both of the Cupola and Lantern on the Line AB, from the Points of those Divisions draw Lines to the Point of Distance D: and where they cut the Visual AO, erect Perpendiculars intersecting the Line HO: which Points are the Centers of the several Circles. On the Vi- suals, between AG, must be describ'd the Out-lines of the Columns and Cornices, in like manner as when a Geometrical Upright is rais'd from a Plan. This done, you proceed to the Delination of the Cupola itself in Perspective, by transferring in- to the Perpendicular EO the several Centers of HO, by Parallels to HI, as LN, &c. On the Center, with the Interval LM, describe the Circle NP, for the Nole of the Cornice; and with the Semidiameter ST describe the Circle QR, and O of the rest. The Numbers 1, 2, 3, 4, shew how the Breaks of the Cornice are determin'd by Lines from the Angles of the Geometrical Plan tending to the Point of Sight, till they intersect the Circle: The Returns of which Breaks are made by Lines tending to the Cen- ters of their respective Circles: as is plain from N 3. and N 4. In this Plan I have omitted the Corbels, lest I should too much encumber the Work.

Hence appears the Necessity of making the Geometrical Plan of the whole Cupola, the Plan of a single Column not being sufficient; by reason each requires its particu- lar Delination. And when the Work itself is to be drawn for painting, you can't well take it from a small Draught by way of Net-work or Squares, but the visual Lines should be drawn in their proper places, and the several Centers found; in which, by fixing Strings, you may readily describe the Circumferences of all the Circles.

Fig. xc.

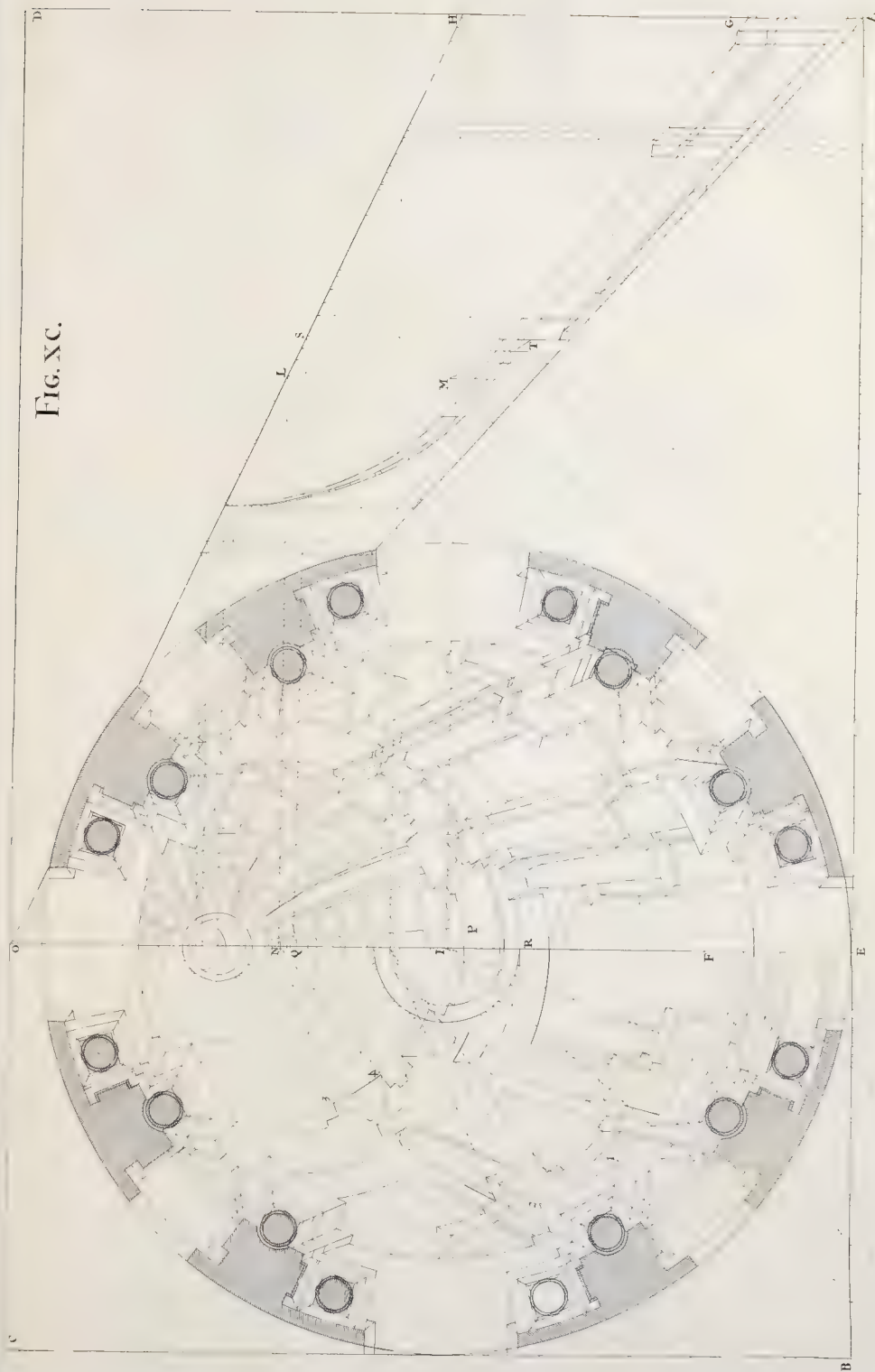




Fig. No. 1.

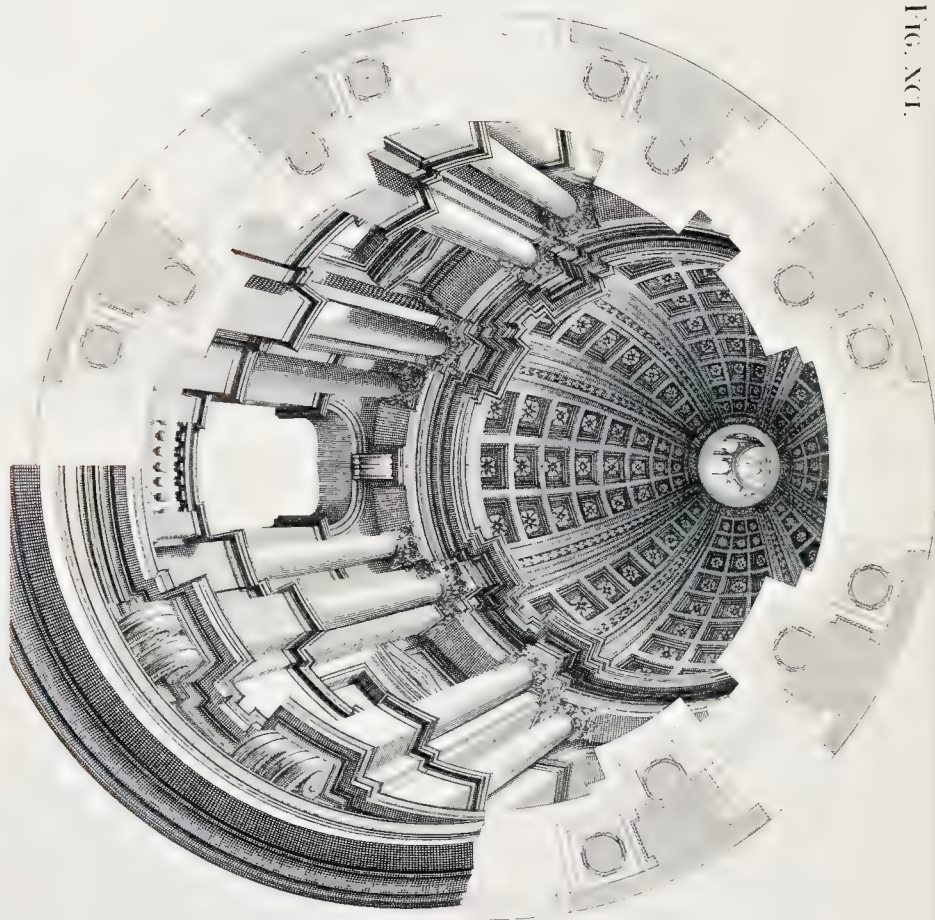
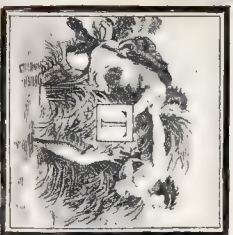


Figura Nonagesimaprima.

Tholus figura nonagesima, cum luminibus & umbris.



HOLUS quem vides in hac pagina, pollicetur sibi vitam diuturniorem illo, quem super telario plano insignis amphitruinus, depinxi anno 1685. in Templo S. Ignatii Collegii Romani. Proinde si casus aliquis illum absumat, non deerunt qui ex isto eundem in melius reficiant. Mirati fuerunt Architecti nonnulli, quod columnas anteriores mutulis imposuerim, id enim in solidis edificis ipsi non facerent. Verum eos metu omni liberavit amicissimus mihi Pictor, ac pro me spondidit, damnum omne se statim reparaturum, si fatiscenibus mutulis, columnas in praeceps ire contingat.

The Ninety-first Figure.

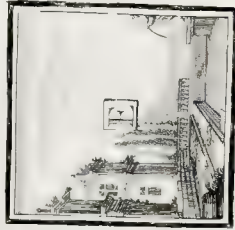
The Cupola of the Ninety-first Figure, with its Lights and Shade.



HE Cupola in this Plate will in all Likelihood be of longer Duration, than that which I painted on a very large Table, for the flat Ceiling of the Church of S. Ignatius of the Roman College, anno 1685. For if that suffer by any Accident, with the help of this its place may be supply'd by a better. Some Architects disslik'd my setting the advanc'd Columns upon Corbels, as being a thing not practis'd in solid Structures; but a certain Painter, a Friend of mine, remov'd all their Scruples, by answering for me, That if at any time the Corbels should be so much furcharg'd with the Weight of the Columns, as to endanger their Fall, he was ready to repair the Damage at his own Cost.

Figura Nonagesecunda.

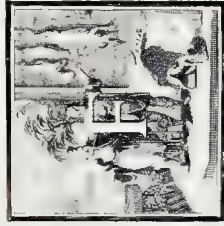
Tholus octangularis.



X circulo fuit octagonum, accipiendo medietatem quadrantis circuli, ut habeantur singula latera octagoni. In eisdem lateribus distribuetur vestigium geometricum totius architecturae, cum projectivis omnium membrorum, juxta modum quem servavimus in limbo circulari figure nonagesime. Utiliter etiam fieret elevatio geometrica totius Operis; quamvis ob spatii angustias ego eam omiserim. Deinde posita una cuspidе circuli, extendatur alia cuspidе ad altitudinem singulorum projecturarum inter spatium A & B, ut hic vides: atque ope parallelarum, omnia transferentur in lineam CD, ut fiat optica deformatio, quam poscit sectio elevationis, cum aliis preparationibus, ut in figura precedenti. Nam hic quoque ope circulorum invenire oportet puncta extrema in prominentiis membrorum singulorum architecturae: ut conjungendo puncta per lineas rectas, quae forment facies octagoni, compleatur totum Opus.

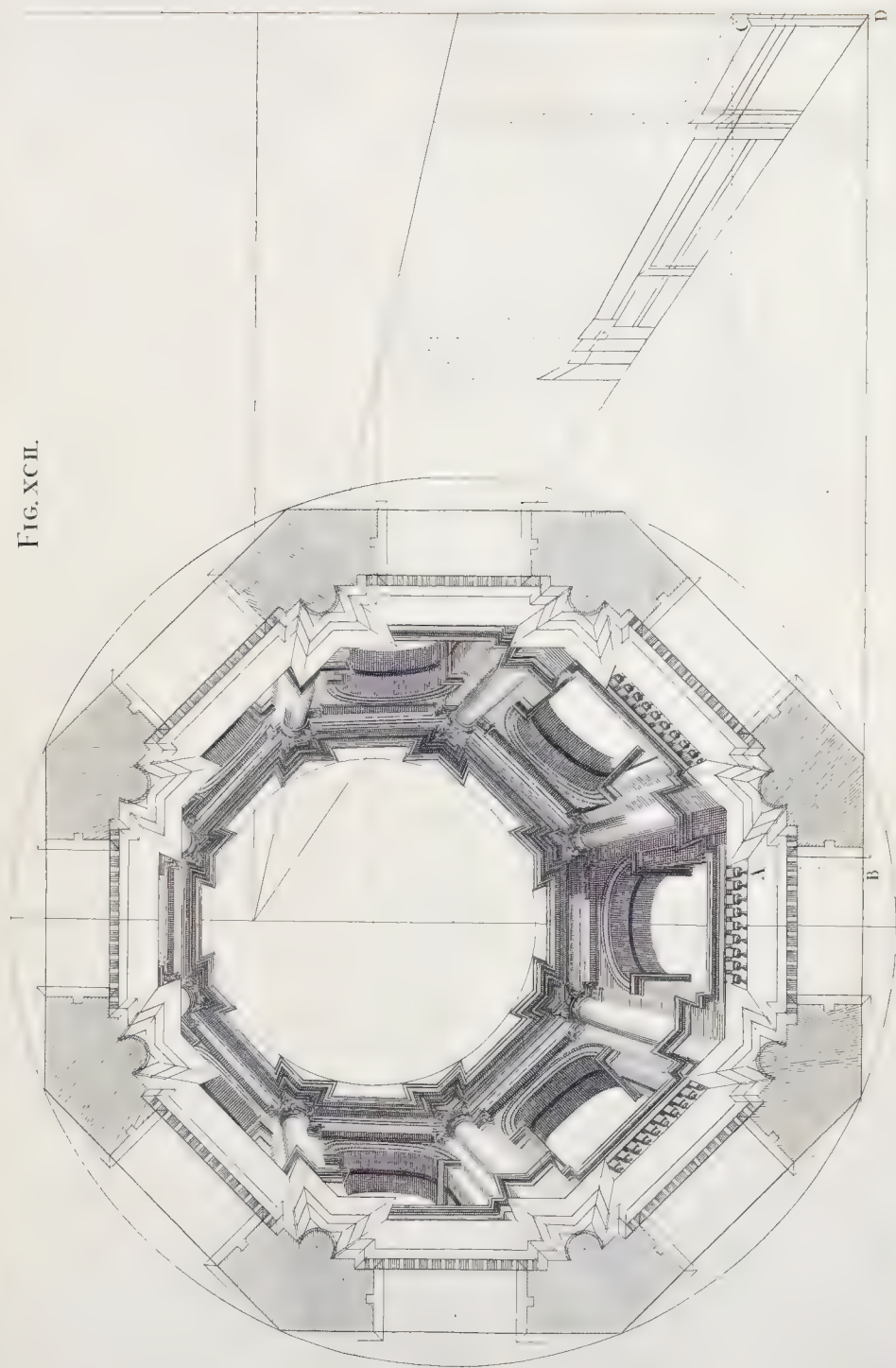
Ninety-second Figure.

An Octangular Cupola.



FROM the Circle describe the Octagon, by taking half the Quadrant of the former for each Side of the latter. On these Sides the Geometrical Plan of the whole Architecture is to be dispos'd, with the Projectures of all the Members thereof, in the same manner as was done in the circular Border of the Ninetieth Figure. It will also be expedient, to make the Geometrical Elevation of the whole Work, tho' tho' Want of Room I have here omitted it. Then placing one Point of the Compasses in the Center of the Circle, extend the other to the Height of the several Projectures between A and B, as you see in the Figure; and by help of the Parallels transfer them all into the Line CD, for putting the Profile of the Upright into Perspective, and drawing the other Requisites, as in the foregoing Figure. For here also, by means of the Circles, are found the extreme Points of the Projectures of the several Members of the Architecture; and by conjoining these Points with straight Lines agreeable to the Shape of the Octagon, the whole Work is completed.

FIG. XCII.



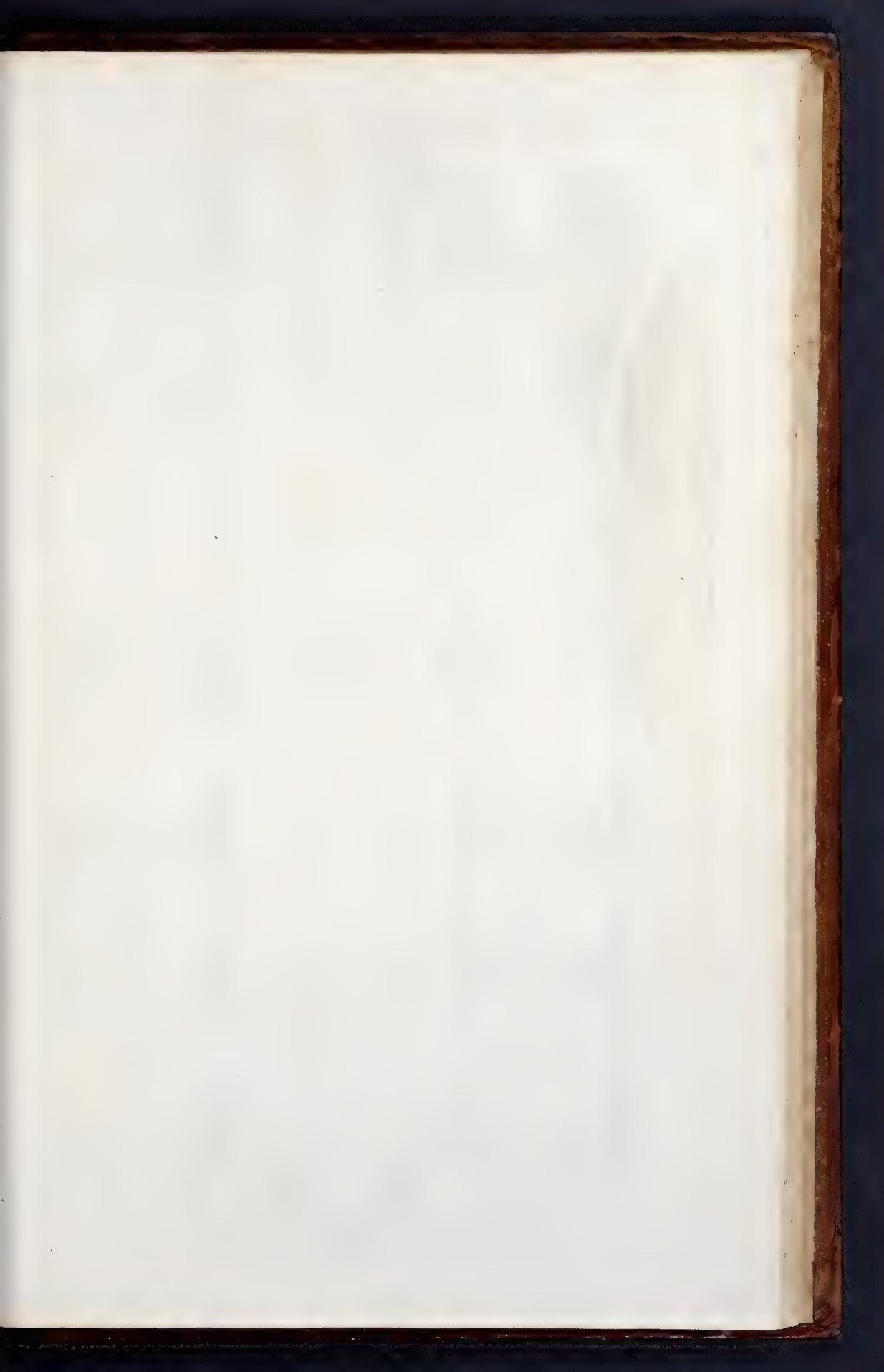


FIG. XCIII.



FIGURA Nonagesimatertia.

Vestigium templi Ludovisiani S. Ignatii almæ urbis.



ONSTITUERAM huic Libro finem imponere figurâ nonagesimâsecundâ ; nihilominus ut satisfaciam precibus amicorum, cupientium addiscere modum reticulationis optice, quæ adhibetur in superficiebus irregularibus, ejusque memini figurâ octogesimâoctavâ, publici juris facere decrevi ejus construendæ methodum. Ipsiusmet retis ope delineavi non solum ædificium mox representandum, sed etiam figuras omnes testudinis templi Ludovisiani, in qua pingendâ nunc occupor. Eademque reticulatione, quæ erit ultima figura hujus Libri, dabimus Operi nostro suum complementum ; quum nulla sit superficies, in qua suas delineationes juxta

Perspectivæ regulas, earum rerum Studiosi absolvere nequeant.

Exhibet hæc figura vestigium totius templi. Quamvis enim non indigeam nisi testudine inter januam maximam & tholum ; proderit nihilominus Architecturæ Studiosis, universi Operis elegantiam ac symmetriam per o-
tium contemplari.

The Ninety-third FIGURE.

The Geometrical Plan of the Church of S. Ignatius at Rome:



Had once determin'd to end this Book with the Ninety-second Figure ; but at the Request of some Friends, who were desirous to learn the Making of Perspective Net-work for irregular Surfaces, as was hinted in the Eighty-eighth Figure ; I resolv'd to publish the Manner of performing the same. By the Help of this Net-work, I delineated not only the Architecture now to be treated of ; but also each Figure in the Vault of the Church of S. Ignatius, which I am at present employ'd in painting. The Method is laid down in the last Figure of this Book, and entirely com-

pletes the same ; there being no Superficies, how irregular soever, but the Studios may thereon describe, by these Rules, whatever Perspective he has occasion for.

This Figure contains the Plan of the whole Church ; for though my present Design requir'd no more than the Vault of the Nave, between the great Door and the Cupola ; I thought it might be nevertheless acceptable to the Curious in Architecture, to have a View of the whole Design, so celebrated for the Elegancy and Proportion of its Parts.

Figura Nonages. quarta.

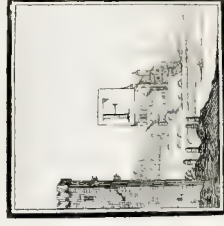
Orthographia templi Ludoviciani.



T magis tibi gratificer, orthographiam seu elevationem templi Ludoviciani in longum disseci delineavi, cum omnibus mensuris quæ vestigio sunt communes; addito tholo juxta ideam Autoris. Ejus autem nondum constructi loco, positum est in A & B telarium cum tholo depicto, de quo supra in figuris nonagesimâ & nonagesimâ primâ.

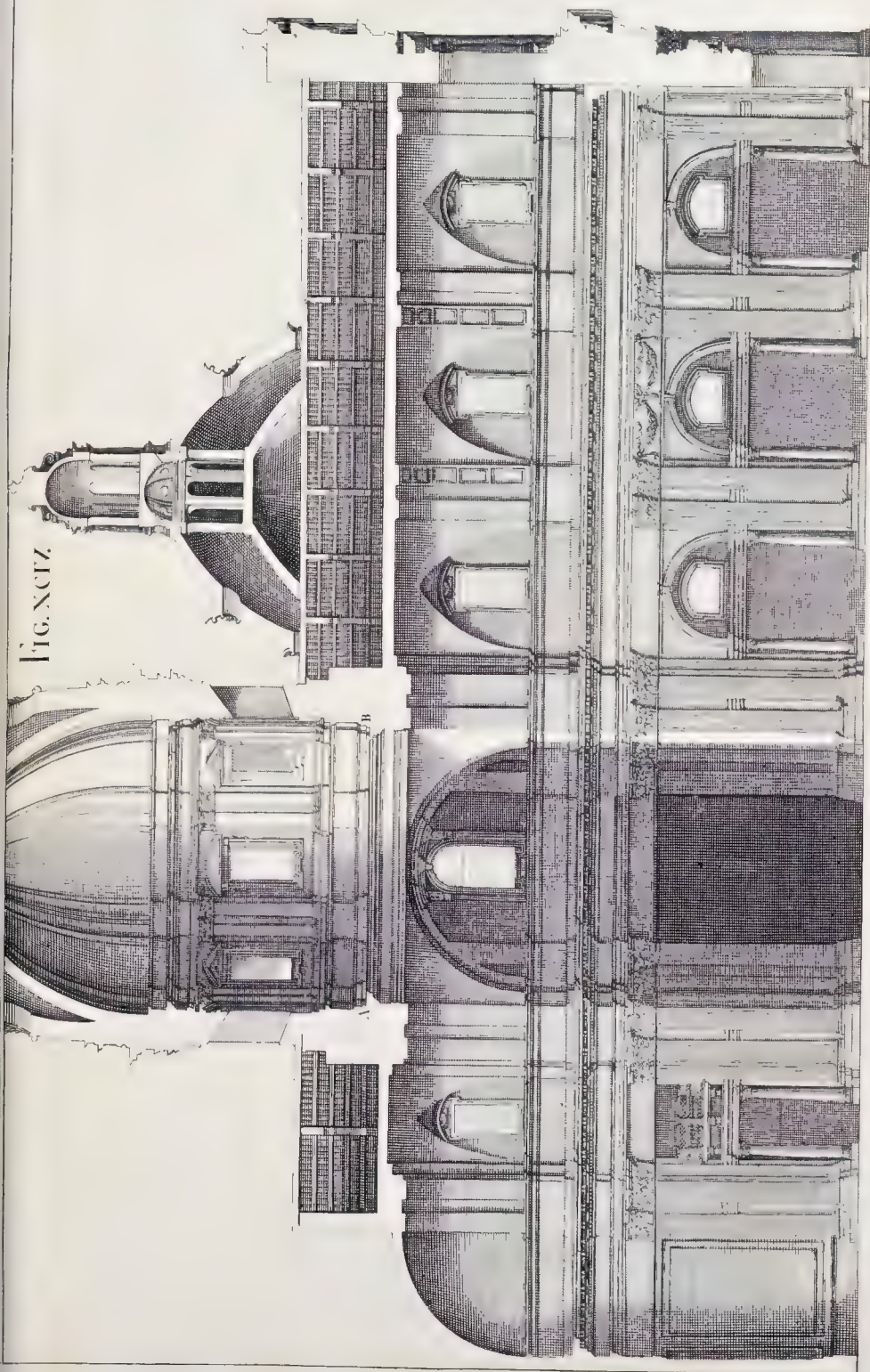
Ninety-fourth FIGURE.

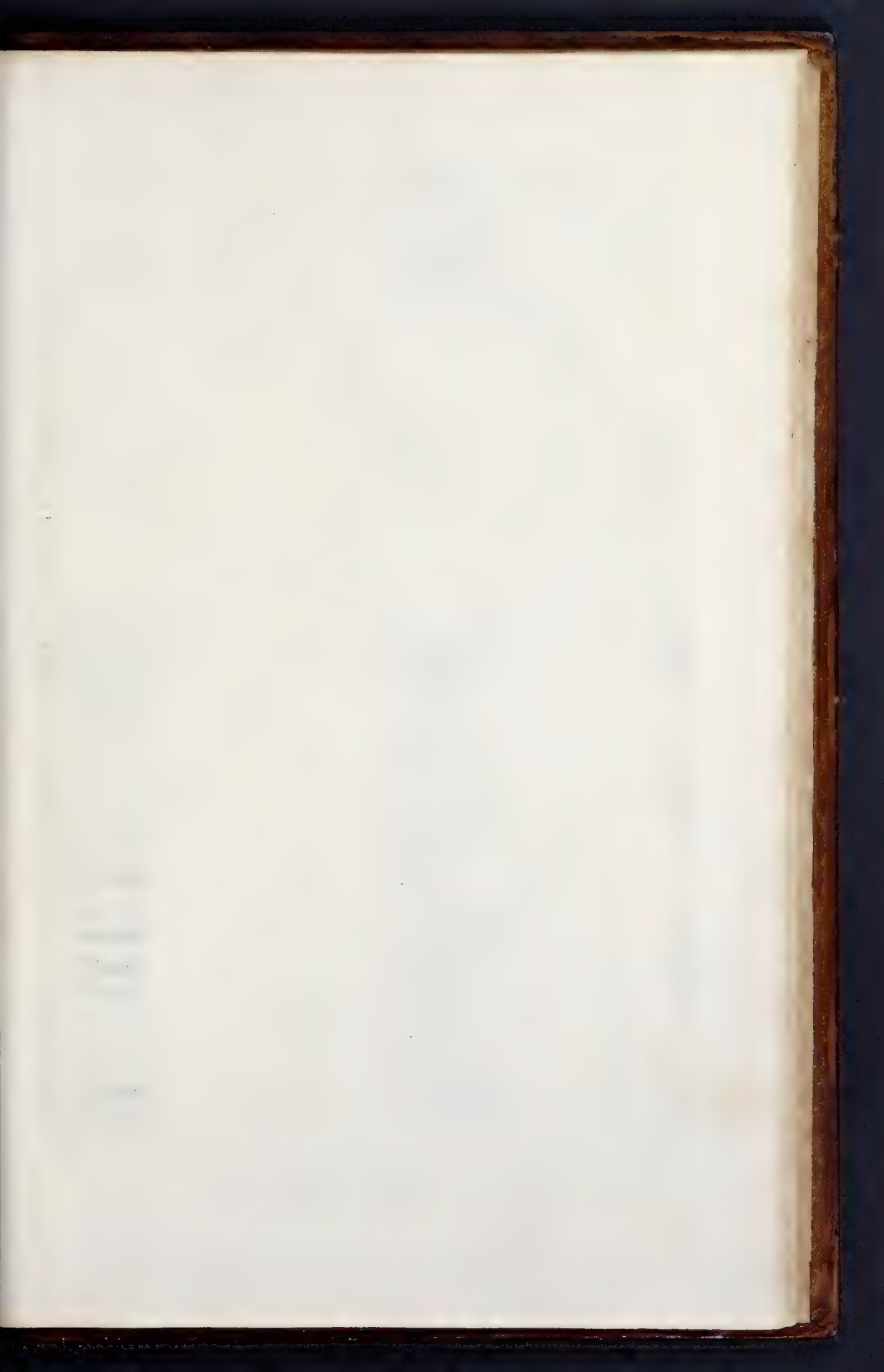
The Orthography, or Geometrical Elevation of the Inside of S. Ignatius Church.



OR your greater Satisfaction, I have here given the Geometrical Upright of the Church dissected lengthwise, with all its Measures agreeable to those of the Plan; as also the Cupola design'd by the Author: Which not being yet built, instead thereof is plac'd between A and B, the painted Cupola before describ'd in the Ninetieth and Ninety-first Figures.

FIG. NO. 7.





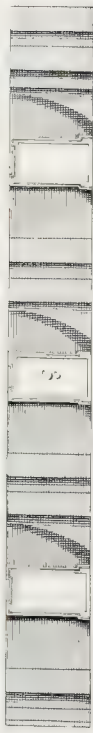
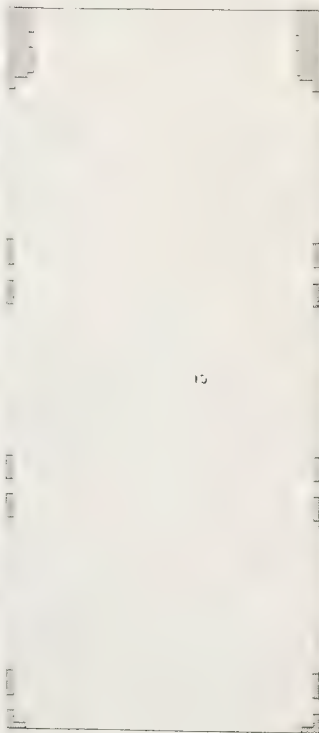


Figura Nonagel. quinta.

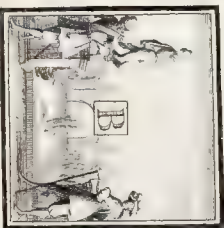
Aliae præparationes ad figuras nonagel-
mamotavani & nonagelmannonani.



X hæc figura in quatuor partes abijctâ, dices ex-
mo inuente methodon qua sunt aspectus optican
delinationem templi Ludoviciani. Prima pars ex-
hibet latus dextrum testudinis inter januan templi
ac theolon. Secunda pars continet vestigium ejus-
dem testudinis, archibus ac lunulis distincta. Ter-
tia pars continet latus dextrum testudinis usque ad
summitatem fenestram, unde incipit Architectura
quam pingimus in fornice. Quarta pars est vestigium geometricum fontis,
cum prominentia quam habent arcus in summitate jam dicta fenestram. Fin-
gimus autem eandem esse soliditatem, tam ædificii depicti, tam veris templi; sicut
etiam columnas, quæ respondent pilis templi, prominent extra ædificationem.

The Ninety-fifth Figure.

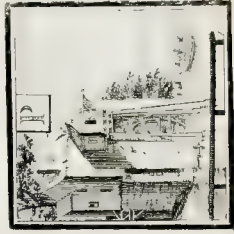
Other Preparations to the Ninety-eighth and
Ninety-ninth Figures.



Y this Figure divided into four Parts, you will
at first Sight perceive the Method I observ'd in
beginning the Perspective Design of this Church
of S. Ignatius. The first Part shews the right-
hand Side of the Vault between the Door and
the Cupola. The second contains the Plan of
the same Vault, with its Arches and Lunettes.
The third Part represents the same right-hand
Side, to the top of the Windows; where be-
gins the Architecture painted in the Vault. The fourth Part contains the
Geometrical Plan of that part of the Vault which is painted; with the
Lunettes made by the Arches above the Heads of the aforesaid Windows.
The Disposition of the painted Architecture above, is the same with that
of the Nave of the Church; save that, answerable to the Pilasters below,
I have suppos'd Columns projecting over the Work.

Figura Nonagesimafexta.

Aliae preparationes ad figuras nonagesimam octavam & nonagesimam nonam.

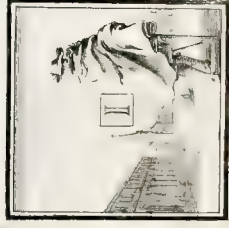


PRIMA pars figure huius trisariam divisæ, repræsentat elevationem geometricam templi supra coronicem, & ædificii in testudine pingendi.

Secunda pars complectitur arcum testudinis maximum, & elevationem geometricam faciei ejusdem ædificii. Tertia pars exhibet vestigium totius ædificii pingendi in testudine, cujus amplitudo eadem est cum amplitudine navis, ut antea dicebamus. Porro vestigium geometricum non minus necessarium est ad pingendum ædificium, quam ad ipsum ex materia solidâ extruendum, ut alibi monuimus.

The Ninety-sixth Figure.

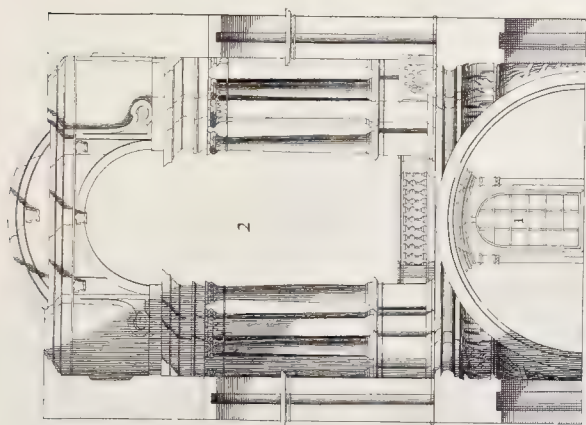
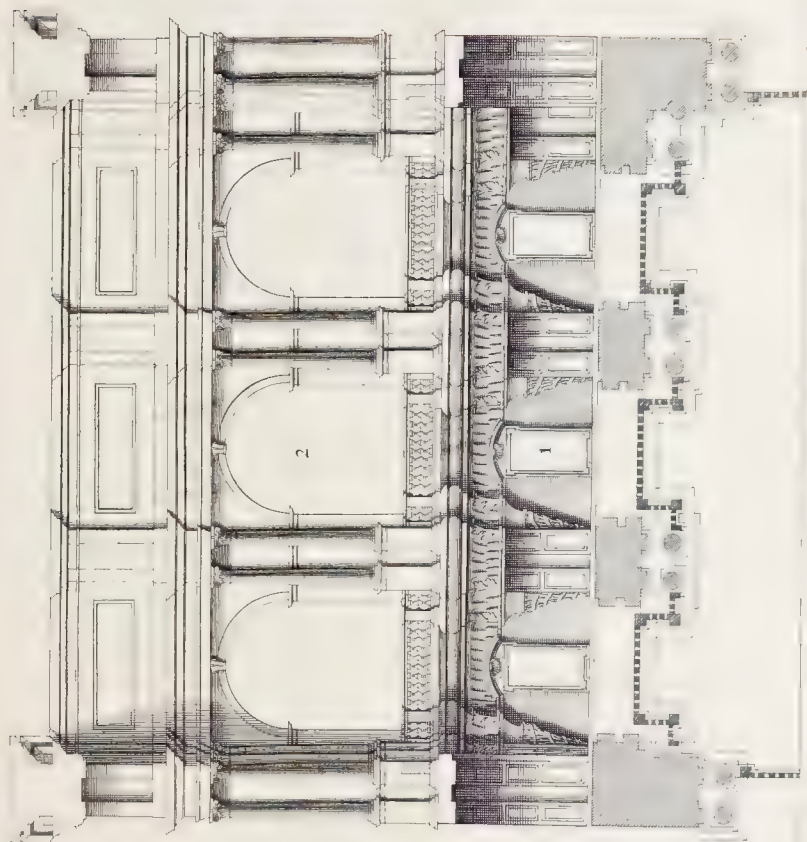
Other Preparations to the Ninety eighth and Ninety-ninth Figures.



In this Figure, which consists of three parts, the first represents the Geometrical Elevation of the Right-side of the Nave above the

Cornice, and of the Design painted in the Vault. The second contains the great Arch of the Vault, and the Geometrical Elevation of the Front of the said Design. The third part shews the Plan of the whole Work painted on the Vault, the Extent and Disposition of which is the same with that of the Nave, as beforementioned. The Geometrical Plan, as I have formerly hinted, is no less necessary for the painting a Design in Perspective, than it is for raising a Structure with solid Materials.

FIG. XCVI.



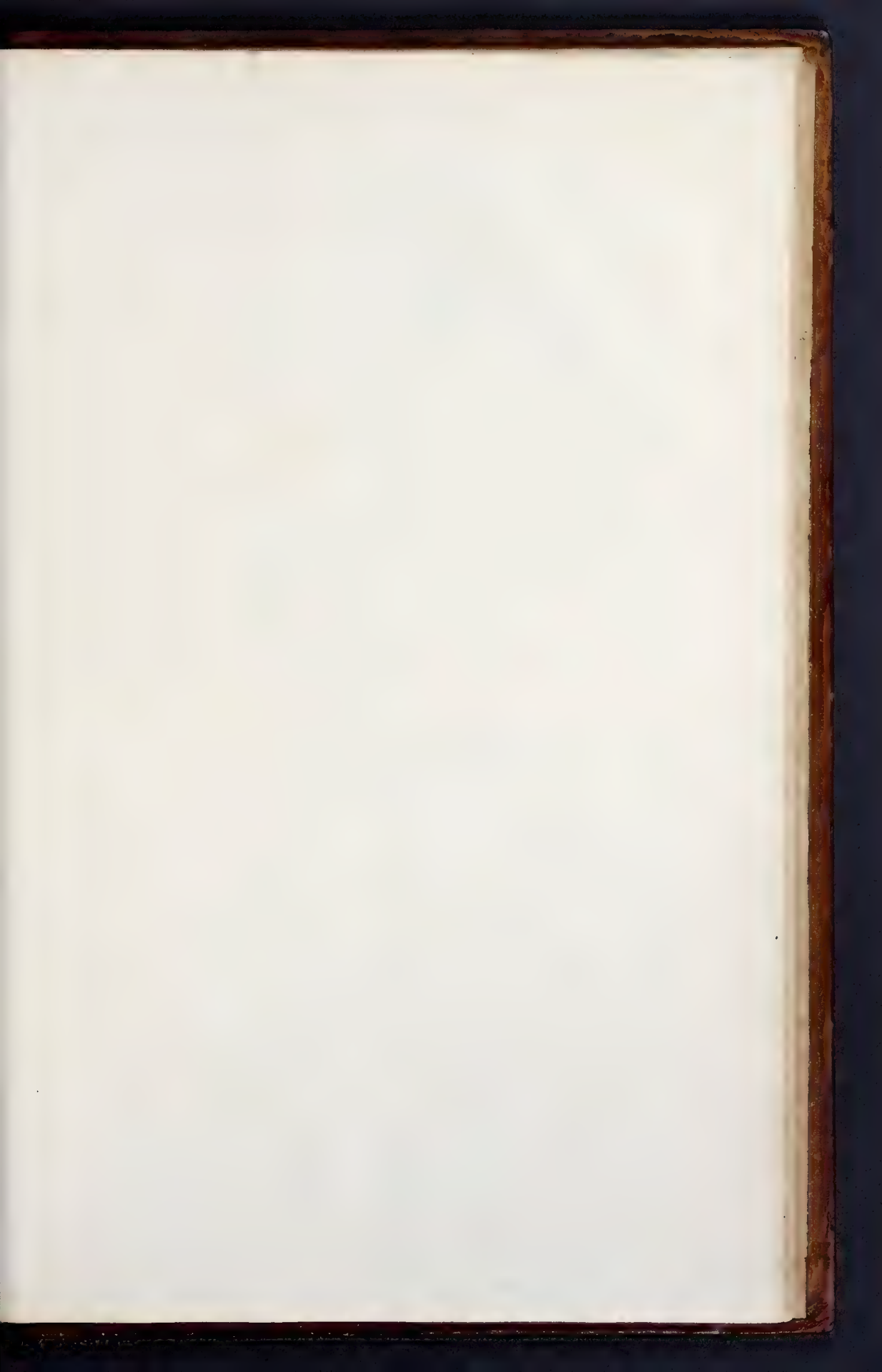


FIG. NO. VI.

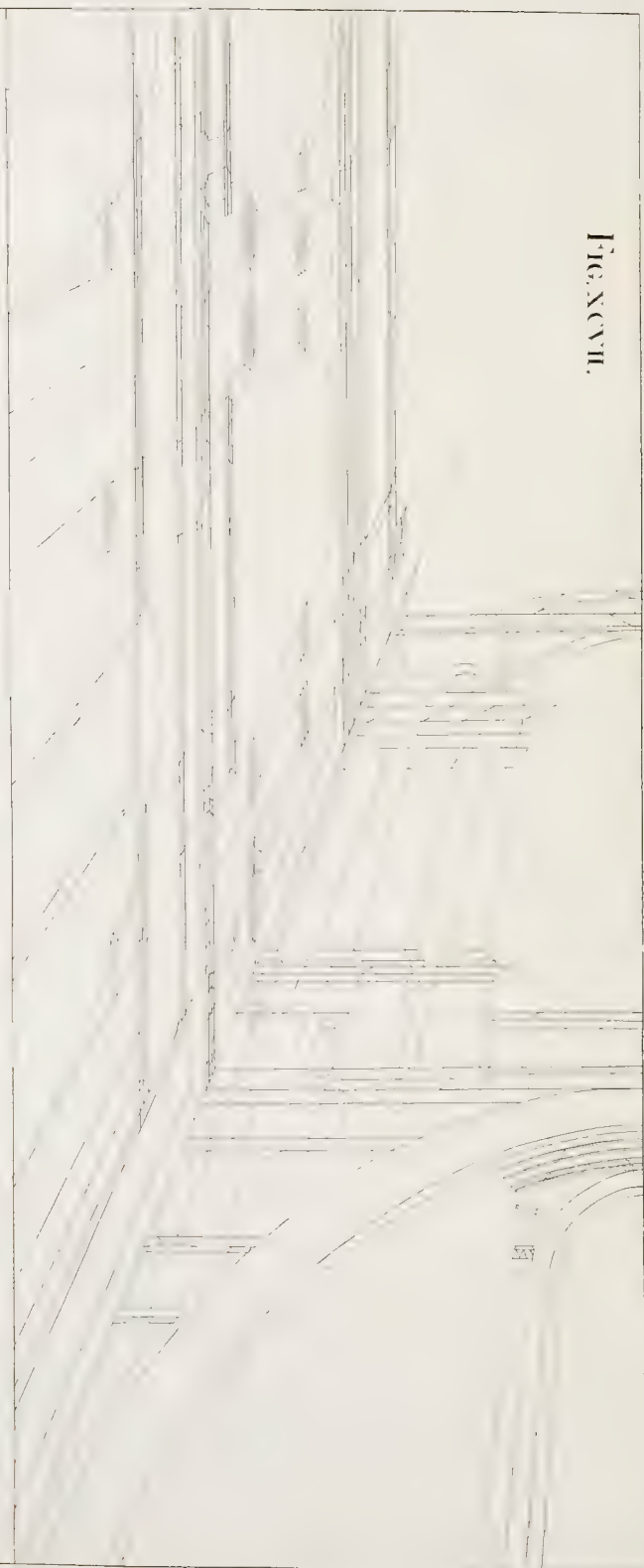
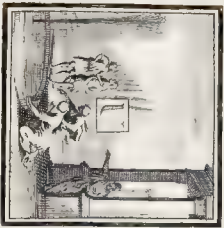


Figura Nonagesima septima.

Alia preparatio ad figuras nonagesimam-octavam & nonagesimanonam.



T optica projectio vestigi & elevationis quartæ partis totius Operis distinctior evaderet, mensuras partium singularum quadruplicavi, eandemque methodum in hac delineatione tenui, quæ figuris octogesima sexta, octogesima septima, octogesima octava, & octogesima nona, explicata fuit. Punctum oculi positum est in medio navis Ecclesiæ; punctum distantia est in linea ex qua incipit arcus testudinis.

Ninety-seventh Figure.

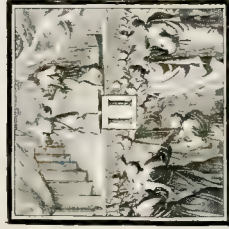
Another Preparation to the Ninety-eighth and Ninety-ninth Figures.



HAT the Perspective of the fourth part of the Plan and Elevation of this Work might be more distinct, I have in this Figure made the Measures of each part four times as big as in the former; and have kept the same Method in this Delination, as was deliver'd in the Eighty-sixth, Eighty-seventh, Eighty-eighth, and Eighty-ninth Figures foregoing. I have set the Point of Sight in the midst of the Nave of the Church; and the Point of Distance is in the Line from which the Arch of the Vault springs.

Figura Nonagel.octava.

Quadrans Architecturæ horizontalis in for-
nice, cum luminibus & umbris.



*ABES in hac paginâ qua-
drantem totius Operis, modo
consucto erutum ex præce-
denti: nimirum, cuspide cir-
cini ex angulis vestigiū acci-
piuntur lineæ perpendiculari-
res; ex angulis verò elevationis desumuntur li-
neæ parallele, ac lineæ visuales ad punctum o-
culi.*

Ninety-eighth Figure.

*A fourth Part of the Architectonical Design,
painted on the Vault of S. Ignatius's Church;
with its Lights and Shadows.*



IN this Figure you have a
Quarter of the whole
Work, drawn from the
foregoing Figure, after the
usual Manner; namely, by
taking with the Compasses
the perpendicular Lines from the Angles of
the Plan; and the parallel Lines from those
of the Elevation, as also the visual Lines
to the Point of Sight.

FIG. XCVIII.

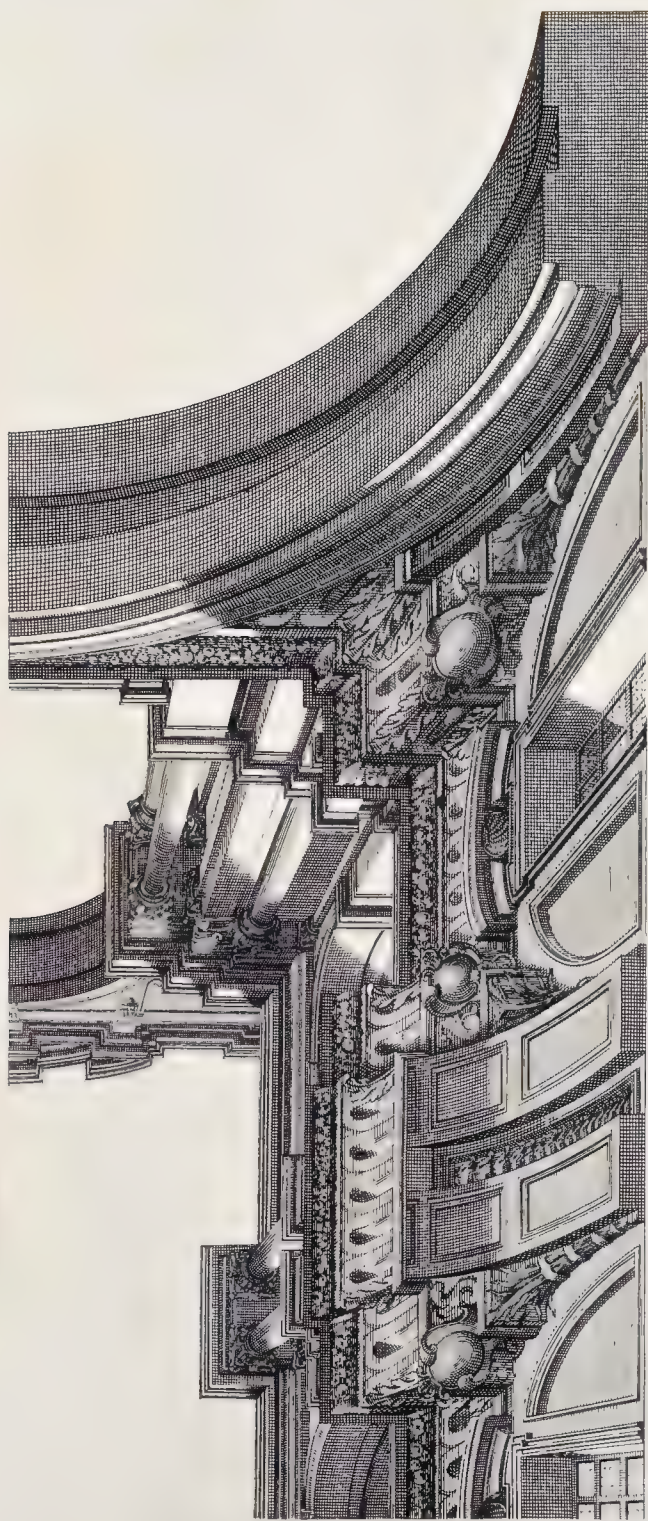






FIG. XLIX.

Figura Nonagesimanona.

Alter quadrans totius Operis.



B dicersitatem duorum quadrantum, tum in longitudine, tum in luminibus & umbris, seorsim apponendum utrumque censui; ut in eis delineandis omnem difficultatem tibi adimerem.

The Ninety-ninth Figure.

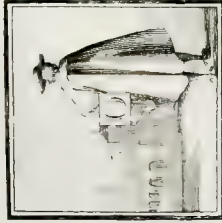
Another Quarter of the whole Design.



Y reason of the Difference of the two Quarters, as well in Length, as in their Lights and Shadows, I resolved to describe them separately, that you might find no Difficulty in designing the whole Work.

FIGURA Centesima.

Modus reticulationis faciendæ in
tesudinibus.



PER A que sunt in planis, contenta sunt duplici reticulatio-
tione, ut notum est. Nam una curvam fit in exemplari,
altera fit in superficie in qua ipsum Opus pingendum est.

At vero tesudines exigunt tres reticulationes. Prima fit
in exemplari, quod sponimus delineatum esse iuxta regulam
Perspective horizontalis. Secunda reticulatio constat ex fun-
damentali, & est propriis, & quas formam geometricam habet
in M. Locum ubi figendi sunt elaci qui insinuant fonta-
culos, exhibent rectæ AB, EF : optica vero descriptio
retili est in N. Punctum oculi est O, distantia est LO.

Itaque si imaginem, tempore nocturno, lumen candele aut
lucernæ existere in O, atque à reti ex fonticulis projecti lineas umbrosas in tesudinem, ex-
dunque linea penicillo colorentur, habebitur tertia reticulatio ad pingendam tesudinem ne-
cessaria.

Dixi si imaginem, quia in tesudinem obliquam tabulato, ac remotam à reti, & multo ma-
gis à lumine, vel projecti nequeant umbra, vel inquam esse ovidea ac distincta, ut oportet.
Itaque ubi nimis fuerit distantia, figes in O extremitatem filii ; cœque usque ad tesudinem
extenso, uteris veluti radio ac lumine candele, ad notandam umbræ locum. Proderit etiam,
ut super tabulato notum sit obsecundas lumine aliquid candele, quod ipsi filo proxime admo-
vacat. Atque his aliisque administratis, tunc indubitanter coloris tuncque super lineas umbrosas,
ac tertiam reticulationem asloberis. Possit etiam rete ex filis fieri in parvâ distantia à cor-
nice, puta in GH, unde incipit basis ædificii : tunc autem umbra in fœmine sunt magis
distincta ac visibiles.

Diligentissimè curabis, ne mensuræ exemplaris discrepent ullatenus à mensuris tesudinibus :
ut rete incidens in angulos, arcus, aut lunulas tesudinis, exatè respondat rei exemplaris.
Dumque si in vitia que emendari nequeant, incidere volis ; scito, regulas omnes Perspective
horizontalis, ac in hominibus aut animalibus, ac in columnis aut cœnicis perspectivæ,
omnino servari oportere.

The Hundredth Figure.

The Method of drawing the Net or Lattice-Work
on Vaults.

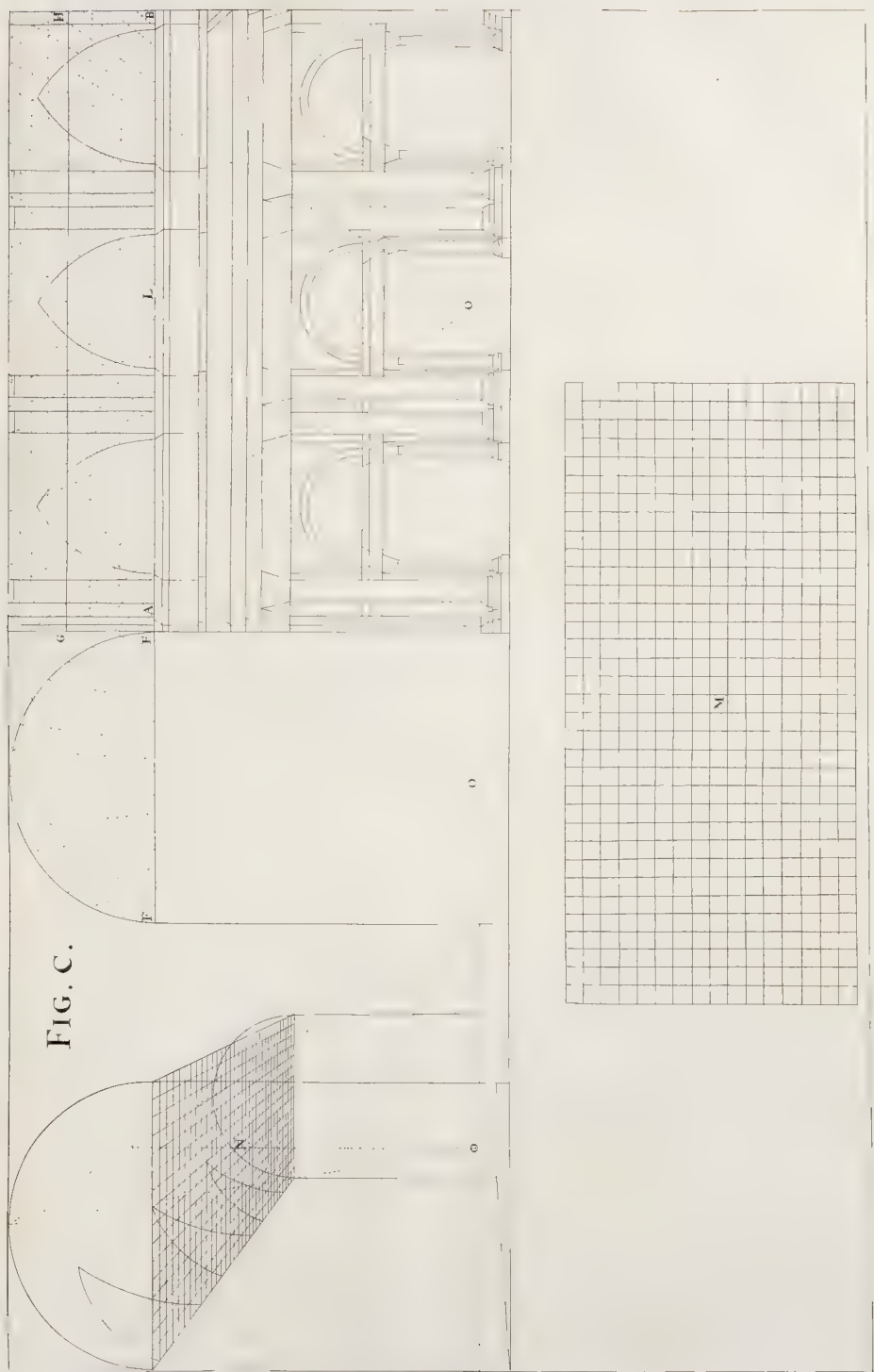


OR Works on a flat Superficies, two Net-works are
sufficient : as has been already intimated : One drawn
on the Copy ; the other on the Table to be painted.
But for arched Surfaces, or Vaults, three are required :
One made on the Copy, which I suppose drawn accord-
ing to Rules of horizontal Perspective. The second
consists of a Frame of small Cords or Threads, to be
hung up ; the Geometrical Form of which is M. The
Lines A B, E F, shew the Place where this Frame is to
be fix'd, in the same manner as the Perspective N. The
Point of Sight is O ; of Distance, L O. Therefore, if
you imagine a Lamp or Candle fix'd in the Night-time at the Point O ; the Shadows
of the Thread, thrown thereby on the Vault, being trac'd by a Pencil, make the third
Net-work requir'd for painting the same.

I say, if you imagine a Lamp thus fix'd ; because either the Scaffold to the Vault ;
or the great Distance of the Vault from the Net-work, or the greater of both from
the Light, may prevent the Shadows from being thrown at all, or at least, may render
them too faint, as not to be distinct enough for the purpose. Therefore, where this
happens, instead of the Light fix one End of a Thread in the Point O ; and extending
the other to the Vault, make use of it as a Ray from the Lamp or Candle, for determi-
ning the Place of the Shadows. It will be also of great use, to second the Motion of
the Thread with the Light of a Candle you may have by you on the Scaffold, hold-
ing the same near the Thread itself. By this, and other such Helps, which your own
Industry will suggest, you may lay these Shadows in Colours, and complete the third
Net-work requir'd. The Frame of Threads may also be fix'd nearer the Vault at
some Distance above the Cornice, as at G H, where the painted Architecture begins ;
for the Shadows thrown on the Arch will by that means become more visible and di-
stinct.

You must be very careful, that the Measures of your Copy are exactly the same
with those of the Vault, that the Net-work thrown into the Angles, Arches and Lu-
nettes of the Vault, may perfectly correspond with that of your Copy. Lastly, if you
would not run into inextricable Errors ; allure yourself, that all these Rules of hori-
zontal Perspective are as strictly to be observ'd in the Figures of Men or Animals, as
in painting Columns, Cornices, or the like.

FIG. C.





Ut Perspectivæ Tyronibus consulerem, qui fortasse non adeo facile percipient duodecim primas figurarum explicationes, totidem novas explicationes hic addo.

For the greater Help to Beginners, and those who are less conversant in the Art of Perspective, I here subjoin a farther Explanation of the first twelve Figures of this Book.

FIGURA PRIMA.

Explicatio linearum plani, & horizontis, punctorum oculi, & distantie; de hoc ultimo præfius.

TRES lineæ diversi inter se nominis, & muneris, item, & duo puncta præcipue necessaria sunt, ut delineatio quælibet optice reddi queat: prima vocatur linea plani, secunda horizontalis ubi est punctum oculi; de tertia loquar in elevationibus: alterum de duobus punctis assignatur oculo, & vulgò dicitur punctum oculi; alterum verò assignatur distantie, à qua nomen habet. Punctum oculi notissimum est, punctum verò distantie non ita; in huius igitur explicatione morabor, & ut clarius ostendam quid sit, & quomodo formandum sit, selegi descriptionem Ecclesiæ geometricè habitam, quam in tres partes divisi, in vestigium, sectionem, & interiorem faciem, in qua facie velis quis pingere, seu delineare aliquid optice, ut elongetur ad mensuram aperturæ quadrati P, ut habes in vestigio, & ad mensuram profunditatis Q, quam habes in sectione.

Super faciem CCCC quam puta esse delineamentum, habes rationem, quæ debet disponere supradicta puncta, & lineas. HI erit linea plani: NON erit linea horizontalis, quæ fieri solet distans à linea plani altitudine hominis, ut videt in B. Punctum oculi erit in O; punctum distantie erit in N, ex qua parte maderis. Hoc punctum N debet tantum abesse à puncto O, quantum tu arbitraris tu vis procul esse ut videas profunditatem illius quadrati PQ, sicut videt in exemplo vestigii, & sectionis: ubi rem velis in suo statu naturali exhibere: in istis enim tam abest N ab O, quam abest homo ab A ad DE, & homo B in sectione, ab FG, ubi est murus in quo pingendum, vel delineandum est.

Si ulterius curiosi descriptionem hanc consideres, videbis quam bene respondeat quadratum P in plano, & elevatio Q, ut naturalis status rei in sectione Perspectivæ posita in facie CCCC, quæ est delineatio. Videbis enim visuales, quæ secant in plano spatium RS, ita pariter secare spatium TV in elevatione: & segmentum visualem XZ in sectione respondere YK in elevatione, quod demonstratione non caret.

FIGURA SECUNDA.

Quadratum optice delineatum.

POSTQUAM descripsi in papyro separatâ quadratum geometricum A, facies duos lineas parallelas inter se distantes altitudinem, quam desideris puncto oculi; linea inferior erit linea plani, linea superior erit linea horizontalis, super quam ponitur puncta oculi O, & distantie B, quod sit ex parte quam movis: linea distantie non debet esse brevior magnitudine rerum describendarum. Transfer postea circino latitudinem quadrati A in CB, unâ cum visibilibus ad punctum O; & similiter transfer longitudinem ipsius quadrati in DC, ducens lineam à puncto D ad punctum distantie E, transeuntem per visualem CO, & ubi illa secat, habebis terminum quadrati optici GFCE, ducens parallelam ad lineam plani in F.

Ut autem hoc idem citius absolverem, sæpius chartam complicavi, ut habes in A.

FIRST FIGURE.

An Explanation of the Lines of the Plan and Horizon, and of the Points of Sight and Distance; but more especially of this last.

FOR beginning any Design in Perspective, there are principally required three Lines, and two Points: One Line where the Feet stand, which is call'd the Line of the Plan, or Ground-line: The second where the Eye is plac'd, call'd the horizontal Line: I shall speak of the third in the Elevations. Of the Points one is assign'd to the Eye, the other to the Distance. The first of these is generally known, the latter not so well understood, though of great Use for giving the Removal or Depth of every Object. I shall therefore insist a while on the Explanation of the Point of Distance; and that I may more clearly shew what it is, I have chosen the Geometrical Description of a Church, which is divided into three Parts; viz. the Plan, Profile, and inner Face; in the midst of which Face one would paint a Piece of Perspective, that should seem to recede as much as the Square P in the Plan, and the Depth Q in the Profile.

On the Face CCCC, which suppose that of the Design, you see the Manner of disposing the two Lines and the two Points. HI is the Ground-line. NON is the horizontal Line, which is usually made a Man's Height above the Ground line, as in B. The Point of Sight is O, the Point of Distance N, on which side you will. This Point N must be as far from O, as the Distance you determine to place yourself at for viewing the Depth of the Square PQ: as is exemplify'd in the Plan and Profile, where you see the thing as in its natural Position: And in them N is distant from O, as far as the Man in A is remov'd from DE; or the Man B in the Profile from FG, which is the Wall to be drawn or painted on.

If you farther and more strictly examine this Description, you'll discern how well the Square of the Plan P, and the Elevation Q, correspond as if naturally put into Perspective on the Face CCCC, which is the Draught. For you see th' Visuals which cut the Space RN in the Plan, cut the same Space TV in the Upright; and the Segment of the Visuals XZ in the Profile, answer that of YK in the Elevation; which needs no Demonstration.

SECOND FIGURE.

A Square in Perspective.

AFTER you have drawn, on a separate Paper, the Geometrical Square A, make two parallel Lines as much distant one from the other, as you would have the Height of the Eye. The under Line is the Plan or Ground-line; the upper Line is that of the Horizon, on which are plac'd the Points of Sight O, and of Distance B, on which side you please. The Line of Distance should not be shorter than the extent of the thing to be describ'd in Perspective. Then with your Compasses set the Breadth of the Square A on CB, and draw Visuals to the Point O; and from the Length of the Square transfer'd into DC, draw a Line from the Point D to the Distance E; and where that cuts the Visual CO, by drawing a Line parallel to GF, you describe the Square in Perspective GFCE.

For the more quick Dispatch of this, I commonly fold the Paper, as you see in A.

FIGURA TERTIA.

Rectangulus altera parte oblongior optice.

QUIDQUID in proximo quadrato vidisti, facies in presenti, transferes latitudinem BC in BC, & longitudinem in CD, duces latitudinem BC ad punctum oculi O, & longitudinem CD ad punctum distantie E, ubi vero hec linea fecit visum CO, erit terminus rectanguli supradicti FG, BC, duces parallelam, ut supra.

FIGURA QUARTA.

Quadratum duplex optice.

EODEM modo construes quadratum duplex A, transferens circino, aut duplicando clarissimè, latitudinem cujuscunque lineæ, ut vides in punctis 1, 2, 3, 4, 5, 6, super lineam plani in isdem numeris, & ab istis transferes visuales ad punctum O. Postea transfer longitudinem 7, 8, 9, 10, super lineam plani in isdem pariter numeris, & ab istis due lineas ad punctum distantie E. Ubi hec lineæ fecerint lineam 6, 7, O, sunt lineæ parallele ad lineam plani, & quadratum conficitur; parem constructionem facies de quadrato secundo, & tertio, facili ex dictis.

FIGURA QUINTA.

Quadratorum vestigia cum elevationibus.

FIGURAM hanc in duas partes disti; in superiori parte vides tria quadrata optica aliquantulum adumbrata, eaque tam inter se distantia, quanta est distributio super lineam plani. BC erit quadratum primum. Secundum erit in EF. Si ergo pferis longitudinem quadrati in BC, eamque duxeris ad distantiam, feceris in DD visuales AO. Si pariter pferas alterum spatium longitudinis ejusdem quadrati in EF, & duxeris ad lineam distantie, habebis secundum quadratum optice. Idem facies de tertio, & de aliis, quæ distribuenda sunt.

In secunda parte. Si desideres supra totidem vestigia formare elevationes cuborum, & stylobatarum, ut in inferiori figura parte vides, satis erit ex omni vestigiolum angulo elevare lineas occultas, & apparentes, determinando altitudinem facies L primo cubo, & anguli ejusdem facies dabunt altitudinem omnium aliorum.

Immo etiam totidem cubos formare potes fine lineis occultis, duccendo solim apparentes, ut vides in tribus expostis adumbratis, & nitidis, quorum perpendiculares sumuntur ab angulis vestigiolum, ut in superiori figura habes in H, & lineæ plani translatæ sunt ab angulis elevationis, ut videretur.

FIGURA SEXTA.

Modus delineandi optice sine lineis occultis.

DESIDERANS facili methodo figuram hanc exponere, dabo rationem elevandi corpora sine lineis occultis, ut in superiori teigi; ostendam igitur hic, quomodo quinque cubi adumbrati desumantur ab eorum vestigiis, & elevationibus.

Duas debes facere preparationes, si libeat, in chartis etiam separatis. Prima erit formare geometricè vestigiolum, & elevationem, ut vides in B & A. Secunda erit distribuere super lineam plani latitudinem vestigi B, puta in NM, & in duabus proximis illius longitudine MX ducta ad distantiam D, fecit visuales MO in R. Spatium autem obliquatum E utile etiam est aliis duobus quadratis postis super eandem lineam plani; anguli quorum translati ad distantiam B, totidem angulos dabunt inter visuales NO, MO. Hoc posito, ducis perpendicularem ad angulum N, quæ in elevationibus geometricis semper necessaria est, eaque tertia linea est, quam supra dixi. Transfer postea altitudinem A in NF, cum visualibus FO, NO, & invenies altitudinem ST. Hoc pariter de cæteris eveniet.

Sciendum superest quomodo supradicta præparatione uti possis ad construedum stylobatam adumbratam, & innatam.

Super aliam igitur chartam dispone scum cum duabus lineis, plani scilicet, & horizontali, una cum puncto oculi O, & perpendiculari V, ejusdem mensuræ cum supradicta præparatione, & facies uti me scisse vides. Experire postea circino NF, equiva esse 1, 5, & 2, 6. Metire pariter ST, & invenies æqualia 7 & 3; facies postea lineas planas, & visuales ad punctum oculi, & habebis planum superius cubi in 1, 2, 3, 4. Hoc idem faciendum est de aliis. Uno verbo: anguli vestigiolum dabunt tibi lineas perpendicularares, & anguli elevationis dabunt lineas planas; atque hoc semper erit.

THIRD FIGURE.

An Oblong Square in Perspective.

WHAT was done in the preceding, repeat in this Third Figure. Transfer the Breadth BC into BC, and the Length into CD, drawing the Breadth BC to the Point of Sight O, and the Length CD to the Point of Distance E. Where this cuts the Visual CO, you terminate the Square FG, BC, by drawing the Parallel, as before.

FOURTH FIGURE.

A double Square in Perspective.

THE double Square A is made after the same manner as the former, by transcribing, either with the Compasses, or folded Paper, the Breadth of every Line, as you see the Points 1, 2, 3, 4, 5, 6, on the Ground-line mark'd with the same Numbers; and from these draw Visuals to the Point of Sight. Then transfer the Points of Length 7, 8, 9, 10, into the Ground-line, as you see also in the same Numbers; and direct their Lines to the Point of Distance E. Where these intersect the Visual 6, 7, O, make Parallels to the Ground-line, and the Square is complete. The same is done in describing the middle Square, and that on the other Side.

FIFTH FIGURE.

Several Plans of Squares, with their Elevations.

IHAVE divided this Figure into two Parts; In the uppermost you have three Squares in Perspective a little shadow'd, distant one from another, according to their Distribution on the Ground-line. BC is the first Square; EF the second. If you then set the Length of a Square on BC, and draw Lines to the Point of Distance, they will intersect the Visual AO in DD. In like manner, if you set another Length of the said Square on EF, and draw to the Point of Distance, you'll have the second Square in Perspective. The same you may do in the third, and as many as you have occasion for.

In the second Part you see, that if upon the fore-mention'd Plans the Elevations of Cubes or Pedestals were requir'd, it would suffice to elevate the occult and visible Lines from every Angle of the Plan; and determining the Height of the Face L of the first Cube, the Angles of that Face drawn to the Point of Sight, give the Height of all the others.

You may form the same Cubes without occult Lines, drawing only those that are apparent, as you see in the three Cubes that are finish'd and shadow'd; the Perpendiculars of which are taken with the Compasses from the Angles of the Plan, as is shewn in HI of the upper Figure; and the level Lines are transfer'd from the Angles of the Elevation, as in FG of the same Figure.

SIXTH FIGURE.

The Manner of designing in Perspective without occult Lines.

BEING desirous to make this Rule as easy as possible, I shall give a farther Account of raising Solids without the Help of occult Lines, which I only touch'd upon in the foregoing Figure. I therefore here shew you, how the five shadow'd Cubes of this Figure are taken from their Plans and Elevations.

Two things preparatory are to be done, and, if you please, on separate Papers. The first is, to describe the Geometrical Plan and Elevation, as you see in B and A. The second is, to dispose on the Ground-line the Breadth of the Plan B; as, for Example, in NM, and the two next to it. The Length thereof MX, drawn to the Point of Distance D, cuts the Visual MO in R; and the fore-mention'd E serves also for the other two Squares plac'd upon the same Ground-line, whose Angles being directed to the Distance D, give as many Angles on the Visuals NO, MO. This done, erect a Perpendicular on the Angle N, which in Geometrical Elevations is always necessary, and is the third Line mention'd in the first Figure. Then carry the Height A on NF, drawing the Visuals FO, NO, which determine the Height ST, and that of the other Squares.

It remains to be known, how to make use of the fore-said Preparation for the Construction of the shadow'd Pedestals.

On another Paper therefore dispose the Horizontal and Ground-lines, together with the Point of Sight O, and the Perpendicular V, keeping the same Measures as in the aforesaid Preparation, and doing as I have done. You may prove by the Compasses, that NF is equal to 1, 5, and 2, 6, and measuring ST, you'll find it equal to 7, 3, then drawing the level Lines, and the Visuals to the Point of Sight, you have the upper Face of the Cube C in 1, 2, 3, 4. The same must be done in the others. In a word, the Angles of the Plan give you the perpendicular Lines, and the Angles of the Elevation give the level Lines, or those parallel to the Ground-line; and this you are always to understand for the future.

FIGURA SEPTIMA.

Aliud exemplum construendi vestigium geometricum, cum elevatione longitudinis.

VIDES hic stylobatam P in quatuor partes divisam, & adumbratam. Si illam optice delineare velis, construere debes supradictas preparationes, geometricam nempe, & opticam. Nonne geometrica intelligitur vestigium A, & elevationem B; namque vero optica, totum id quod includitur in GDEO.

Transfer igitur latitudinem geometricam CD vestigii A super lineam plani pariter CD, & transfer longitudinem DE super lineam plani pariter DE, operans more solito; & habebis vestigium optice. Transfer postea elevationem HX in CG perpendicularis; ducens visualem GO, eleva ad lineam GO omnem angulum, quem planum facit in linea CO, & habebis altitudinem necessariam etiam sectionis.

Transfers denique circino in aliam chartam angulos vestigii, qui dabunt tibi lineas perpendiculares, & anguli sectionis dabunt lineas planas: Visuales vero ducet ad punctum oculi.

FIGURA OCTAVA.

Stylobata optice.

HIC etiam postquam feceris supradictas preparationes, geometricam scilicet, & opticam; facies presertim stylobatam adumbratam, transferens circino angulos vestigii, ut construas perpendiculares; & angulos sectionis, ut formes lineas planas, ut supra. Nam sic duo anguli vestigii MO dabunt lineas perpendiculares EF; angulus vestigii R dabit perpendicularem P. & sic reliqui anguli dabunt reliquas lineas perpendiculares. Similiter à sectione angulus I dabit lineam planam HN. Brevis, primus terminus sectionis ID dabit altitudinem linearum planarum in facie stylobatæ adumbratæ EFHN. Secundus terminus Q dabit altitudinem faciei oppositæ, & oculatæ P.

Duo tamen moneo; primum, ut faciens vestigia geometrica, ducas ab elevatione A totidem lineas ad latera vestigii B, quos angulos invenies in prominentiis supradictæ elevationis A, ut manifestè vides in lineis quæ ex punctis compositi, illæ enim à stylobatâ A cadunt super vestigium B; quare prominentia major in elevatione L facit lineam majorem L in vestigio.

Secundum quod moneo sit, ut volens elongare vestigium optice delineatum MOR à linea plani K, quantum erit spatium C in eadem linea plani, tantumdem elongabitur spatium G à linea ejusdem plani.

FIGURA NONA.

Optica delineatio Architecturæ Jacobi Barozzii: & primum, de stylobata Ordinis Etrusci.

QUANDOQUIDEM omnibus nota est Architectura Barozzii, cum hic penitus immutata cum suis regulis particularibus, & generalibus expono; Metieris autem illam modulit ut fieri solet; qui igitur illam desiderat, in sequentibus figuris inveniet totam, simulque discet optice reddere. Cum autem non minus Optice studio quam Architecturæ necesse sit, effingere delineamenta rei construenda, ab hoc verè, ab illo fide, id est, cum uterque facere debeat vestigium, elevationem, sectionem, & faciem, ob id delineavi hic stylobatam Ordinis Etrusci cum suo vestigio, quem vides in AB, ut facilius percipias quod in proxima figura dixi, à totidem scilicet angulis prominentiarum elevationis, totidem ducendas esse lineas super lineam vestigii; cum hoc necesse sit ad inveniendum illorum angularum cum istis lineis concursum in suis degradationibus. Nota, longitudinem, quam voco F ductam in G esse illam, à qua non solum nascitur vestigii obliquitas, verum etiam ab illa nascitur obliquitas illius quam voco sectionem E. Ob id in altero hujus ejusdem figure stylobatæ totum id è contrario videbis.

Non amplius repetam quam modo eruat nuda delineatio, de qua superius pluries à dicam tamen angulos primi termini sectionis E daturos lineas planas faciei D, & angulos vestigii daturos omnes perpendiculares.

FIGURA DECIMA.

Stylobata Doricus, & ratio vitandi difficultatem quamdam, quæ occurrit inter illum optice delineandum.

HIC oritur difficultas hec. Vestigium A optice translatum in C adeo contrahitur, ut distinctè videri nequeat ubi collocetur circini pes, ut transferri possint perpendiculares stylobatæ adumbratæ; totaque hæc difficultas oritur à propinquitate quam habet linea horizontalis, seu punctum oculi cum linea plani. Ut igitur illam vitare: Ducet lineam plani in-

SEVENTH FIGURE.

Another Example of a Geometrical Plan, with the Elevation of its Length.

IF you would delineate in Perspective the Pedestal P, which you here see divided into four Parts, and shadow'd; you must make the two foregoing Preparations; namely, the Geometrical and the Perspective. By the Geometrical, I mean the Plan A, and the Elevation B; By the Perspective, all that's contain'd within G, C, D, E, O.

Then transfer the Geometrical Breadth CD of the Plan A, into CD of the Ground-line; and the Length DE of the said Plan into DE of the Ground-line working after the usual manner; and you will have the Plan in Perspective. Again, set the Elevation HX on CG of the Perpendicular, and drawing the Visual GO, elevate thereto every Angle made by the Plan on the Line CO, and you have all the Heights necessary for the Profile.

Lastly, by the Compasses you transport on a clean Paper the Angles of the Plan, which give the perpendicular Lines; and those of the Profile, which give the level Lines. The Visuals you draw to the Point of Sight.

EIGHTH FIGURE.

A Pedestal in Perspective.

HERE also, after you have made the two foregoing Preparations, the Geometrical and the Perspective; this shadow'd Pedestal is made by taking with the Compasses the Angles of the Plan, for drawing the Perpendiculars, and the Angles of the Profile for the level Lines, as before. Thus the two Angles of the Plan MO, give the perpendicular Lines EF. The Angle of the Plan R, gives the Perpendicular P; and the other Angles give their respective Perpendiculars. So likewise in the Profile, the Angle I gives the level Line HN. In short, the first Outline of the Profile ID gives the Height of the level Lines on the Front of the shadow'd Pedestal. The other Outline Q gives the Height of the occult and back part thereof.

Nevertheless, two things are to be observ'd; first, that in making the Geometrical Plan, you draw from the Elevation A, as many Lines to the Side of the Plan B, as you have Angles in the Projectures of the said Elevation; as is manifest in the pointed Lines, which fall, from the Upright A, on the Plan B, where that of the greatest Projecture L in the Elevation makes the outer Line L of the Plan.

The second thing to be observ'd, is, That if you would have the Perspective-Plan MOR as far within the Ground-line K, as the Breadth of the Space C on the same Line, the Space G will then be the Distance thereof from the said Ground-line.

NINTH FIGURE.

The Architecture of Vignola put in Perspective; and first, the Pedestal of the Tuscan Order.

SINCE every one is acquainted with Vignola's Architecture, I determine not to alter it, but to explain it, with its general and particular Rules; measuring the same with Modules, after the usual manner. He therefore that has it not, may find it in the following Figures, and at the same time learn the Method of putting it in Perspective. And whereas the Drawing the Plan, Elevation and Profile of what's to be built, is no less necessary for him that studies Perspective, than for the Architect, the first performing in Appearance, what the latter does in Reality; I have therefore here delineated the Tuscan Pedestal, with its Plan, as you see in AB, that you may the better apprehend what I said in the foregoing Figure, That from all the Angles of Projecture in the Elevation, Lines must be let fall on the Plan; this being of absolute necessity for finding the Correspondence of the Angles with the Lines in the Perspective Projection. Observe, that what I always call Length, as from F to G, is that from which proceeds not only the Foreshortning of the Plan; but also that which I call the Profile E. Wherefore, in the opposite Pedestal of the same Figure, you'll see a contrary Disposition of the Whole.

I shall not here repeat, how the finish'd Pedestal is taken from these; having so largely spoken of that before; but briefly tell you, that the Angles of the first Out line of the Profile E give the level Lines of the Face D, and the Angles of the Plan give all the Perpendiculars.

TENTH FIGURE.

A Dorick Pedestal, with the Manner of shunning a Difficulty, which occurs in putting the same in Perspective.

IN this Figure a Difficulty arises, which is this; That the Plan A put in Perspective in C, is so foreshorten'd, that one can't see distinctly, where to place the Compasses, for transferring the Perpendiculars on the shadow'd Pedestal; which is caus'd by the too near Approach of the horizontal Line to the Ground-line. For avoiding this Difficulty,

ferius

• Et quantum libuerit, & super illam ferēs denud latitudinem, & longitudi-
nem more solito, retinendo puncta oculi, & distantia OE, & sic videbis vesti-
gia magis minusve distincta; Vestigium enim E distinctius est vestigio D, &
D distinctius est vestigio C.

FIGURA UNDECIMA.

Stylobata Ionicus, & ratio vitandi aliam difficultatem in
elevationibus.

IN elevationibus etiam sectionis optice potest accidere, ut si visualis LK
nimis recta sit, sectio B restringatur. Elongando lineam plani ab L ad
M, visualis MN erit inclinatio, & consequenter sectio C erit latior,
& distinctior.

Nova, difficultatem hanc sepe sepius te habiturum in figuris præcipue, quæ
multas lineas habent, ut in figura quadragesimasecunda, ubi pariter ratio-
nem vitandi confusionem reddam.

Neque tibi molestie sim, quod in hac figura lineam horizontalem infra li-
neam plani collocaverim, id enim feci, ut illarum diversos effectus videam, ut-
que tu in tuis studiis mutes, & discas.

FIGURA DUODECIMA.

Stylobata Corinthius cum suis pilis.

FECISSE septimam figuram magno tibi documento eris ad constru-
dum, & dividendum stylobatam A, & vestigium B; cum nihil addere
debeas præter pilas C cum coronice, quæ duo latera ambiit. Optice
hoc vestigium delineabi in D, quæ delineatio distinctior est, quia inferius du-
xi lineam plani; & distinctior etiam est sectio E, cum elongaverim visualem
FG. Sic semper agam, ut detur locus figuræ adumbratæ, & ut etiam videam
perpendiculares stylobatæ adumbrati cadere super angulos vestigii, & lineam pla-
ni incidere è diametro super angulos sectionis E. Iterum libenter moneo, ut
facias supradictas preparationes in chartulis separatis, ut initio assuefcus
transferendis figuris nitidis circine; facile enim tibi postea erit integras ma-
chinas Perspectivæ jucundioris delineare, ut videbis: in hoc enim tota regu-
la hujusce, & totius operis facilitas sita est.

ELEVENTH FIGURE.

The Ionick Pedestal, and the Way to shun another Difficulty
in the Elevations.

IN Elevations of the Profile in Perspective, it may sometimes happen,
that the Visual LK may be so direct, as to render the Profile B too
close and narrow; wherefore prolonging the Ground line from L
to M, make the Visual MN, which being much more oblique, does con-
sequently render the Profile C more broad and distinct.

And observe, that this Difficulty will very often occur; especially in Fi-
gures that have many Lines, as the Forty-second Figure has, where I speak
also of the manner of avoiding the same.

Nor let it trouble you, that in this Figure I have plac'd the horizontal
Line below the Ground-line; which I have done, that you might see their
different Effects, and by changing the Disposition of your Designs, improve
and learn.

TWELFTH FIGURE.

A Corinthian Pedestal, with its Pilasters.

THE Performance of the Seventh Figure will be a great Assistance
to you, in the Construction and Division of this Pedestal A, and
the Plan B; since you have nothing more to add here, but the
Pilasters C, and the Mouldings which surround the two Sides. This Plan
is put in Perspective in D, and becomes more distinct by my sinking the
Ground-line lower; and the Profile E is also more distinct by the Remo-
val of the Visual FG, as mention'd in the foregoing Chapter. This I shall
always do, that there may remain Room for the shadow'd Figure, and
that you may also see that the Perpendiculars of the shadow'd Pedestal fall
directly upon the Angles of the Plan, and that the level Lines directly
answer the Angles of the Profile E. I repeat my Advice, that you would
make the forelaid Preparations on several Papers, and accustom yourself
at the beginning to take off the finish'd Figures with the Compasses; for
it will become very easy to you afterward, to design entire Machines of
delightful Perspectives, as you'll see hereafter. And indeed in this Practice,
the Facility of this Rule, and of all that follows in this Work, does chiefly
consist.

Respondetur objectioni factæ circa punctum oculi opticum.

Non omnium sensus est, uni optico operi unicum tantum punctum assignare, e.g. toti spatio fornicis, tholi, & tribunæ, quam vocant, expressæ in figura nonagesimatertia, nolunt concedi unicum punctum, volunt concedi plura.



ESPONDEO, objectionem hanc dupliciter intelligi posse: vel enim intelligi posset, non esse assignandum unicum punctum toti illi spatio; atque in hoc sensu vera est; cum enim spatium illud valde oblongum sit, dividi debuit in partes, atque assignanda tribune, quam dicunt, tholæ, & fornici, propria puncta; cum hoc communiter doceant, ubi situs nimium est longus, & parum altus. Vel potest intelligi de qualibet ex dictis partibus, & sic intellecta penitus falsa est. Primo, quia præstantiores fornices aularum, & templorum, qui optico artificio ornati sint, si unicum opus reddunt, à suismet authoribus determinatum idemque unicum punctum accepisse compertum est. Secundo, quia cum ars optica sit mera veri fictio, non id pictor facere potest, ut à qualibet parte simul et veritatem, verum ab uno determinato puncto id ostendat. Tercio, quia si, e.g. fornici, qui uno integroque optico opere ornatur, plura puncta assignaveris, nullum reperies locum, unde integrum opus spectare possis, & ad summum ex quolibet puncto tantum partem illius spectabis, nusquam verò totum opus. Ex dictis igitur rationibus concludo ab inducentibus plura puncta in eodem opere induci malum majus eo, quod unicum punctum inducit; quare hoc omnino necessarium est: prout in que unicum opus formandum sit, ad quod collimare debeant ex omni operis parte figura simul & architectura. Quo posito, negari rationabiliter nequit, à me etiam concedi unicum punctum spectando fornici amplo, aptoque ad representandum unicum opus, qualis est fornix in D. Ignatii templo. Si vero propter situm irregularem, ut dicimus, architectura extra punctum aliquantulum deformetur, & figura pariter operi optico intermixta extra commune punctum aliqualem patientur deformitatem, præterquam quod à supradictis rationibus excusatur, nequaquam id vitio arti est, sed laudi; quandoquidem ars à suo puncto exhibet, proportionem posita, ut rectum, ut planum, ut concavum, id quod tale non est.

An Answer to the Objection made about the Point of Sight in Perspective.

Every one does not approve, that in a Perspective of great Extent one Point of Sight only should be assign'd the whole Work; as for Example, In the whole Length of the Nave, Cupola, and Tribune, express'd in the Ninety-third Figure, they will by no means allow of one single Point, but insist upon several.



ANSWER, This Objection may be understood two ways; either that one Point alone is not sufficient for that whole Length, and in this sense 'tis true; for that Space being very long, it ought to be divided into Parts, and proper Points assign'd to the Tribune, Cupola, and Vault of the Nave; as is commonly taught, where the Situation is of a great Length, and not very high. Or it may be understood of any One of the said Parts, and so is altogether false. First, Because in the Vaults of Halls or Churches painted by the greatest Masters, if they consist of one Piece only, we find but one Point of Sight assign'd. Secondly, Since Perspective is but a Counterfeiting of the Truth, the Painter is not oblig'd to make it appear real when seen from any part, but from One determinate Point only. Thirdly, Because, if in a Vault, for Example, where you would paint one entire Design of Architecture and Figures, you assign several Points of Sight, you will find no place whence you may take a perfect View of the Whole, and at best you can only view each Part from its proper Point. From all which Reasons I conclude, that the Introduction of many Points into the same Piece, is more injurious to the Work, than making use of one only: Wherefore 'tis absolutely necessary in a regular Situation, and where the Work is all of a piece, to place the same, as that the Figures and Architecture may from every part of the Design have respect thereto. This suppos'd, I confess that I myself make use of one Point of Sight only, in very large Vaults that consist of one Design, such as that of the Nave of the Church of S. Ignatius. If therefore through the Irregularity of the Place, the Architecture appear with some Deformity, and the Figures intermix'd therewith seem any thing lame and imperfect when view'd out of the proper Point, besides the Reasons just now given, it's so far from being a Fault, that I look upon it as an Excellency in the Work, that when view'd from the Point determin'd, it appear, with due Proportion, straight, flat, or concave; when in reality it is not so.

I N D E X.

I N S T R U M E N T A paranda, Explicatio linearum plani & horizontis, ac puncto- rum oculi & distantie,

*Modus delineandi optice quadratum,
Optica delineatio reſtangulari, alterâ parte longioris,
Optice descriptio quadrati duplicis,
Veſtigia quadratorum cum elevationibus,
Modus optice delineationis abſque lineis oculis,*

*Aliud exemplum veſtigii geometrici, cum elevatione lon-
gitudinis,
Optica projectio ſtylobatæ,
Optica delineatio Architecturæ Jacobi Barozzii, & pri-
mum de ſtylobatæ Ordinis Etruſci,
Optica deformatio ſtylobatæ Dorici; ubi de modo vitandi
confuſionem in veſtigii delineandis,
ſtylobatæ Ionici deformatio; ubi de vitanda confuſione
in elevationibus,
Deformatio ſtylobatæ Corinthii, cum duabus pilis,*

*Projectio ſtylobatæ Ordinis Compoſiti,
Deformatio circuloſum,
Optica delineatio columnæ,
Optica projectio baſis Etruſcæ,
Deformatio baſis Doricæ,
Optica delineatio baſis Ionice,
Optica imminutio baſis Corinthiæ,
Baſis Atticurgæ optice imminuta,
Optica imminutio capitelli Etruſci,
Optica projectio capitelli Dorici,
Deformatio capitelli Ionici,
Optica projectio capitelli Corinthii,
Optica descriptio capitelli Compoſiti,
Deformatio coronicis Etruſcæ,
Optica delineatio coronicis Doricæ,
Preparatio figuræ ſequentis,
Optica projectio adificii Dorici,
Optica projectio adificii Ionici; ubi de modo jungendi fi-
ſtium cum vero.
Optica projectio coronicis Corinthiæ, cum capitello &
ſummitate columnæ,
Delineatio geometrica coronicis Ordinis Compoſiti,*

*D. formatio coronicis Compoſitæ,
Preparatio ad figuram trigefimam quintam,
Deformatio coronicis Compoſitæ ad latus inſpectæ,
Preparatio ad figuram trigefimam ſeptimam,
Deformatio columnæ Etruſcæ,
Preparatio ad figuram trigefimam nonam,
Deformatio adificii Dorici,
Veſtigium geometricum adificii Ordinis Dorici,
Elevatio geometrica adificii Dorici,
Modus vitandi confuſionem in contractione veſtigiorum
& elevationum,
Contractio veſtigii figuræ quadrageſimæ,
Contractio elevationis figuræ quadrageſimæ primæ,
Dimidium adificii Dorici optice deformati,
Modus delineandi eundem adifici-
um, veſtigia adificii Ionici,
Elevatio geometrica adificii Ionici,
Deformatio elevationis adificii Ionici,
Architecturæ Ionice,
Ordo Corinthius,
Delineatio columnæ ſpiralis Ordinis Compoſiti,*

*Ordines Architecturæ aſumpti ex Palladio & Sea-
mozzio.*

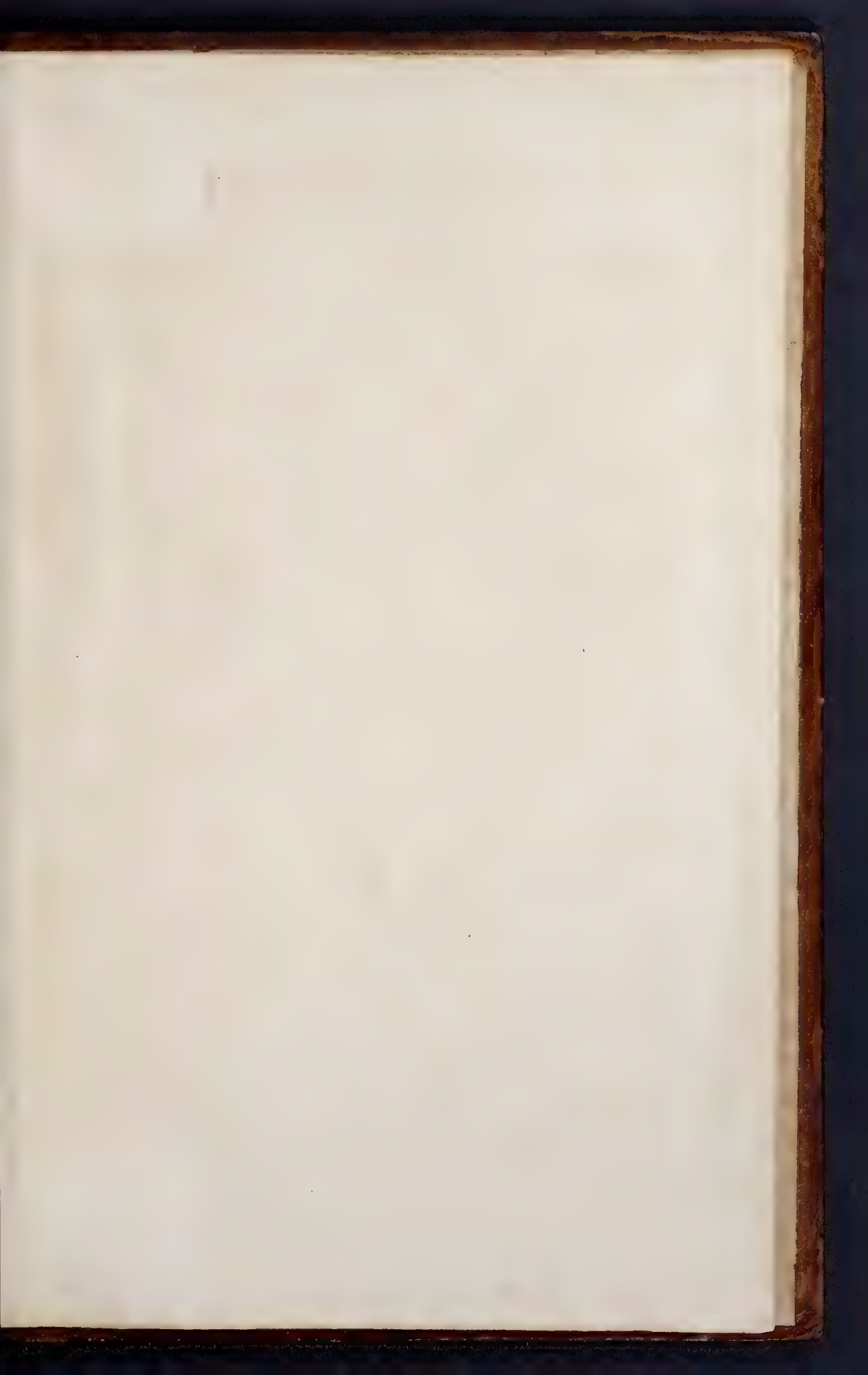
F I G. U T E N S I L S for Drawing

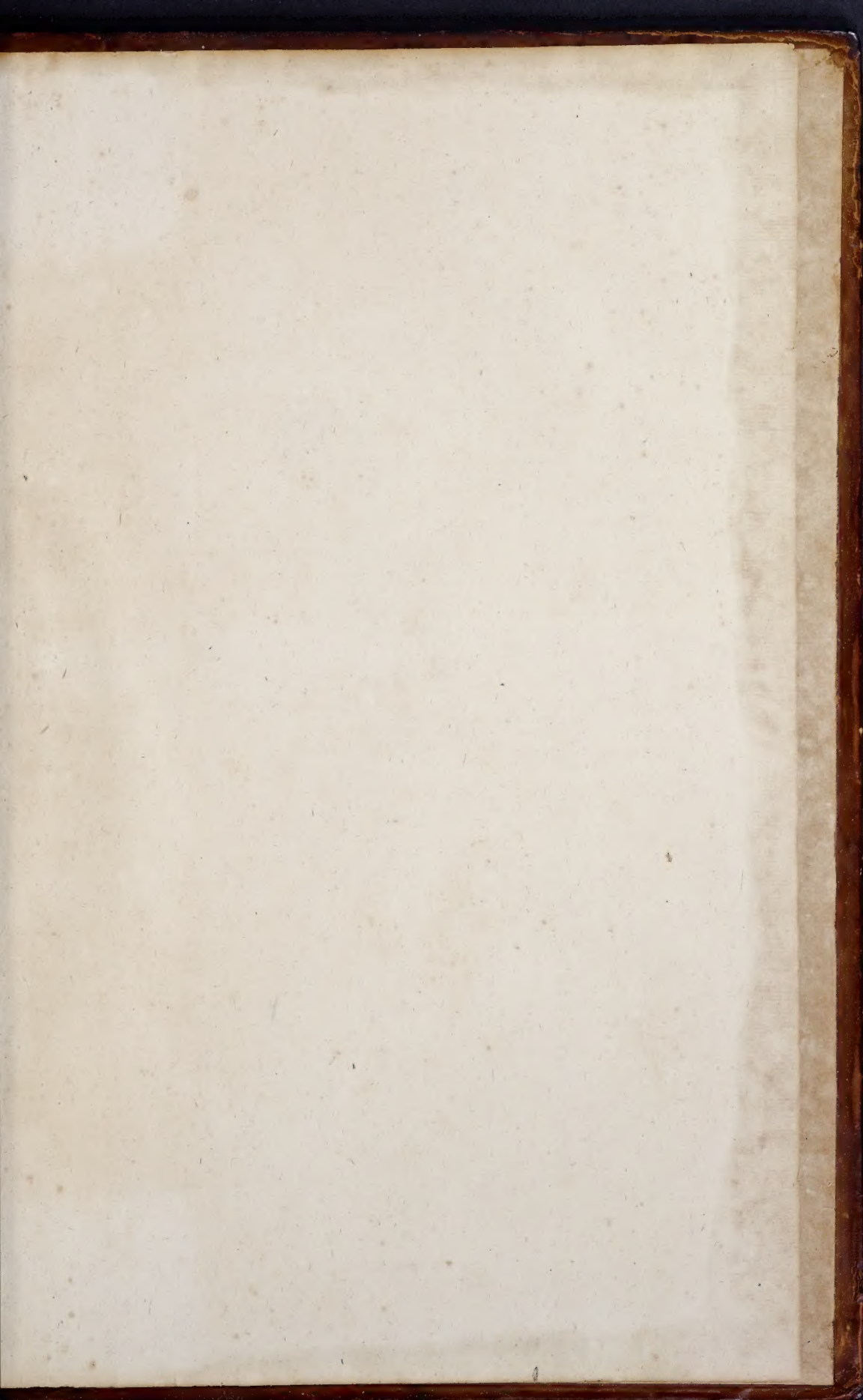
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I N D E X.

Modus triplex delineandi columnas spirales,
Vestigia aedificii Ordinis Corinthii,
Elevatio aedificii Ordinis Corinthii,
Deformatio vestigiorum & elevationis aedificii Corinthii,
Adumbratio figura sequentis,
Aedificium Ordinis Corinthii octangulare,
Vestigia Tabernaculi octangularis,
Tabernaculum octangulare,
Modus erigendi machinas quae constant pluribus ordinibus telariorum,
De reticulandis telariis, quae representent aedificia solidia,
Vestigia aedificii quadrati,
Aedificium quadratum,
Vestigium aedificii rotundi optice imminutum,
Proiectio aedificii rotundi,
Vestigium geometricum, ac prima preparatio ad figuram septuagesimamprimam,
Elevatio geometrica vestigii praecedentis, & secunda preparatio ad figuram septuagesimamprimam,
Deformatio vestigii figurae sexagesimaeprime, & preparatio tertia ad figuram septuagesimamprimam,
Deformatio elevationis figurae sexagesimaeoctavae, & preparatio quarta ad figuram septuagesimamprimam,
Theatrum representans nuptias Canae Galilaeae, constructum Roma anno 1685, in expositione Ven. Sacramenti, in templo Farnefsiano Societatis Jesu,
De theatris sceniciis,
Aliud vestigium theatri; ubi de modo inveniendi ejus punctum,
 Sectio scenarum theatri,
Elevatio scenarum coram inspectarum; ubi docetur artificium, ut scene oblique apparent recte,
Modus delineandi exemplar scenarum,
Modus reticulandi & pingendi scenas theatri,
De projectionibus horizontalibus,
Projectiones vestigii & elevationis mutui,
Horizontalis projectio mutui inumbrati,
Stylobata Corinthii horizontaliter contracta,
Columna Corinthia horizontaliter deformata,
Capitella Corinthia horizontaliter contracta,
Coronix Corinthia,
Coronix Corinthia horizontaliter contracta,
Horizontalis projectio columnae,
Preparatio necessaria ad sequentem figuram, & ad projectiones horizontales in laquearibus vel testudinibus,
Horizontalis projectio balustrarum figurae octogonaeprime, cum brevi distantia,
Horizontalis projectio Architecturae in laqueari quadrato,
Horizontalis projectio theli,
Theolus figurae nonagesime, cum luminibus & umbris,
Theolus octangularis,
Vestigium templi Ludovisiani S. Ignatii almae urbis,
Orthographia templi Ludovisiani,
Aliae preparationes ad figuras 98 & 99,
Aliae preparationes ad figuras 98 & 99,
Alia preparatio ad figuras 98 & 99,
Quadrans Architecturae horizontalis in fornice, cum luminibus & umbris,
Alter quadrans totius operis,
Modus reticulationis fascinae in testudinibus,

- FIG.
 LIII. B. Three different ways of delineating wreath'd Columns.
 LIV. The Plan of a Design of the *Corinthian* Order.
 LV. The Geometrical Elevation of a *Corinthian* Work.
 LVI. The Perspective-Plans and Upright of the *Corinthian* Design foregoing.
 LVII. The rough Draught of the following Figure.
 LVIII. Part of an Octangular Work of the *Corinthian* Order.
 LIX. The Plans of an Octangular Tabernacle.
 LX. An Octangular Tabernacle in Perspective.
 LXI. The Manner of erecting Machines that consist of several Ranges of Frames.
 LXII. Of making the Net-work on Frames, for representing the Architecture as solid.
 LXIII. The Plan of a square Design.
 LXIV. A square Design in Perspective.
 LXV. The Plan of a Circular Work in Perspective.
 LXVI. A Circular Design in Perspective.
 LXVII. The Geometrical Plan, and first Preparation to the Seventy-first Figure.
 LXVIII. The Geometrical Elevation of the foregoing Plan, and second Preparation to the Seventy-first Figure.
 LXIX. The Plan of the Sixty-seventh Figure in Perspective, and third Preparation to the Seventy-first Figure.
 LXX. The Perspective of the Elevation of the Sixty-eighth Figure, and fourth Preparation to the Seventy-first.
 LXXI. A Theater representing the Marriage of *Cana in Galilee*, erected in the Jesuits Church at *Rome*, 1685, for the Solemnity of exposing the Holy Sacrament.
 LXXII. Of Scenes for the Stage.
 LXXIII. Another Plan of a Theater, with the Method of finding the Point of Sight therein.
 LXXIV. The Section or Profile of Scenes for Theaters.
 LXXV. The Elevation of Scenes in Front, and how the oblique Scenes are made to appear direct.
 LXXVI. The Manner of delineating the Designs of Scenes.
 LXXVII. The Manner of making the Net-work or Squares, and painting the Scenes of Theaters.
 LXXXVIII. Of horizontal Projections.
 LXXXIX. The Plan and Elevation of a Corbel in Perspective.
 LXXX. The horizontal Projection of a shaded Corbel.
 LXXXI. *Corinthian* Pedestals in an horizontal Perspective.
 LXXXII. A *Corinthian* Column in horizontal Perspective.
 LXXXIII. A *Corinthian* Capital in horizontal Perspective.
 LXXXIV. A *Corinthian* Cornice.
 LXXXV. A *Corinthian* Cornice in horizontal Perspective.
 LXXXVI. A Column in horizontal Perspective.
 LXXXVII. The Preparation necessary to the following Figure, and to all other horizontal Perspectives, whether on flat or vaulted Ceilings.
 LXXXVIII. The horizontal Projection of the Balustrade of the Eighty-seventh Figure, view'd at a small Distance.
 LXXXIX. A horizontal Piece of Architecture in a square Ceiling.
 XC. A Cupola in horizontal Perspective.
 XCI. The Cupola of Fig 90, with its Lights and Shades.
 XCII. An Octangular Cupola.
 XCIII. The Geometrical Plan of *S. Ignatius's* Church at *Rome*.
 XCIV. The Orthography of *S. Ignatius's* Church.
 XCV. Other Preparations to the 98th and 99th Figures.
 XCVI. Other Preparations to the 98th and 99th Figures.
 XCVII. Another Preparation to the 98th and 99th Figures.
 XCVIII. Fourth-part of the Architectonical Design on the Vault of *S. Ignatius's* Church, with its Lights and Shades.
 XCIX. Another Quarter of the whole Design.
 C. The Method of drawing the Net-work on Vaults.





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